Volume XXXIV.
Number 6.

MARCH, 1908.

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MAR. 5 1908
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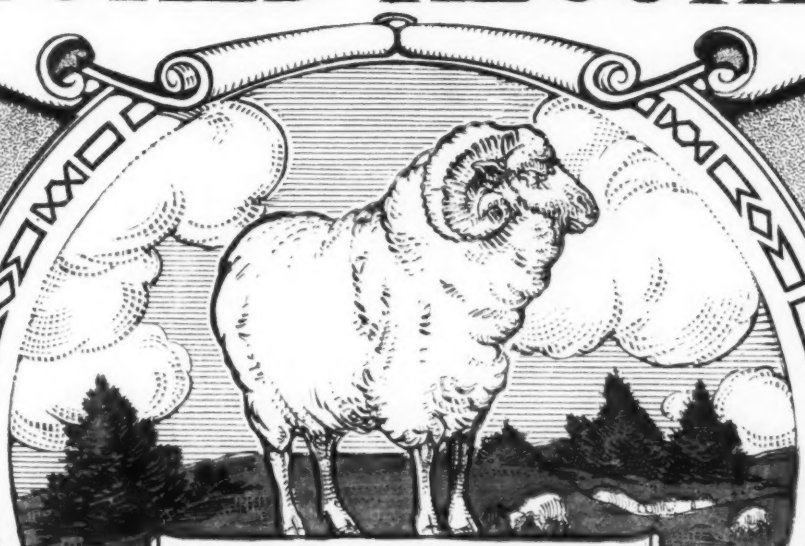
TEXTILE WORLD RECORD



Special Features

German Dress Goods Competition; An Analysis of Cost Showing What American Mills Have to Contend With

System for the Mill.

The Effect of Moisture on the Elasticity and Strength of Yarn.

LORD & NAGLE COMPANY, BOSTON, MASS.

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The Textile-Finishing Machinery Co.

HOWARD BUILDING

STAIRWAYS, 83 EXCHANGE PLACE [ENTRANCES] ELEVATOR, 171 WESTMINSTER ST.

PROVIDENCE, R. I.

BUILDERS OF ALL KINDS OF

MACHINERY

FOR

BLEACHING
DYEING
DRYING

AND

FINISHING

Singeing Machines,

Boiling Kiers,

Washers, Squeezers,

Chemic and Sour

Rusden Patent

Continuous Chainless

Steamer,

Aniline Agers,

Dyeing Machines,

Open Soapers,

Blanket Washers,

Color Kettles,

Horizontal or Vertical Drying Machines, with Copper or Tinned Iron Cylinders,

Automatic Tentering Machines,

Water and Starch Mangles,

Dampening Machines,

Dyeing Machines for Chain Warps.

Calenders for Rolling, Glazing, Chasing and Embossing, also Calenders for Moire Finish.

Sole Manufacturers of Patented Flexible Cloth Expander for Cylinder Drying Machines, Calenders, Mangles, &c.

Patent Combination Rolls Made of Cotton and Husk, especially adapted for Soft Finish, Unequalled for Elasticity and Durability.

Cotton, Paper, Husk, Chilled Iron, Brass and Rubber Rolls, Electro-deposited Copper Rolls for all Purposes.

Padding and Drying Machines for Shade Cloths.

Single and Double Cylinder Engines.

Hydraulic Presses and Pumps.

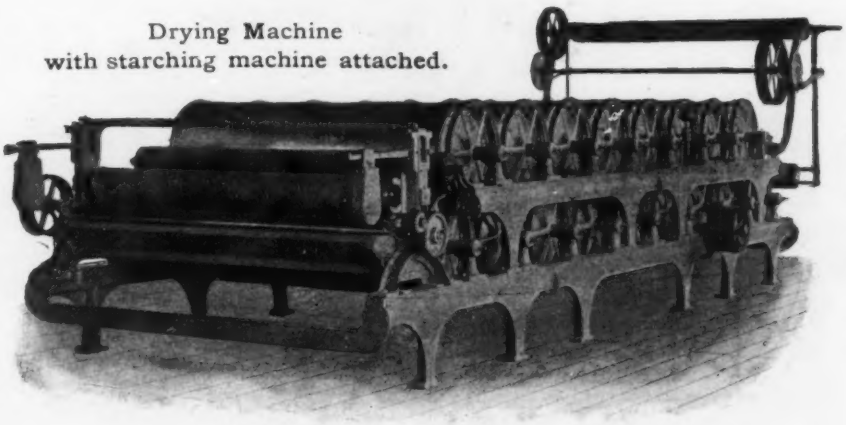
Mercerizing Machinery for Piece Goods and Yarn in the Warp or Chain

ALL KINDS OF OUTFITS FOR BLEACHING THREAD AND SOFT TWISTED YARN.
BLEACHING MACHINERY FOR YARNS IN THE WARP OR CHAIN.

Estimates, Drawings and full particulars of complete plants furnished on application.

Southern Agent, STUART W. CRAMER, Charlotte, N. C., Equitable Building, Atlanta, Ga.

Drying Machine
with starching machine attached.



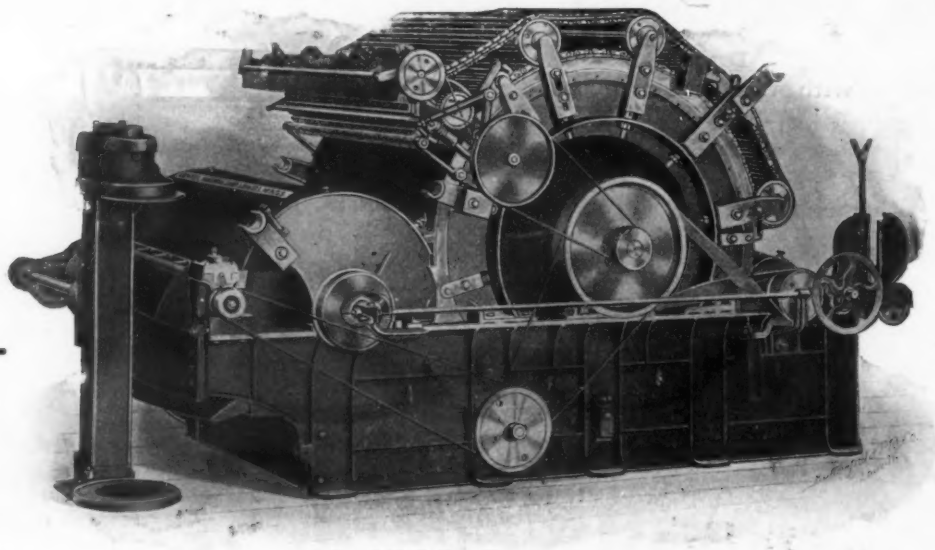
Bleaching,
Drying,
Dyeing,
Finishing,
Machinery

for all textile fabrics.

H. W. BUTTERWORTH & SONS CO.

PHILADELPHIA, PA.

Providence Office, Room 417 Industrial Trust Building.



Cotton and Worsted Machinery

With Modifications to Suit Any Class of Work.

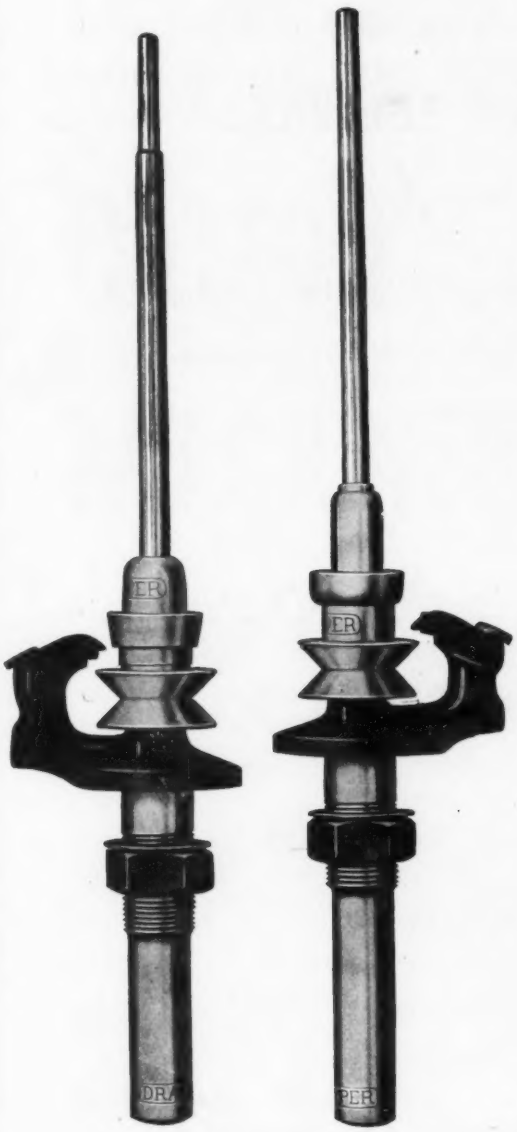
Cotton Machinery: Cards, Railway Heads, Drawing Frames, Fly Frames, Speeders, Ring Spinning Frames, Twisters, Spoolers, Reels, Warpers, Slashers, Winders, Looms, Shearing Machines, Balling Machines, Folders, Stamping Machines, Sewing Machines, Size Pumps, Size Kettles, Drawing-in Frames, Baling Presses, Indigo Grinders.

Worsted Machinery: Spinning Frames with caps, rings or flyers, Dandy Rovers and Reducers, Cone Second Finishers, Reducers and Rovers, Gill Boxes for Drawing, Preparing and Finishing, Weigh Boxes and Drawing Boxes, Cap Trap, Flyer and Ring Twisters.

Plans, Specifications and Estimates furnished upon application.

Lowell Machine Shop

LOWELL, MASS.



Two New
Large Size
Spinning Spindles.

We make

Draper,
Whitin,
McMullan

and other
types of

Spindles;

also

Northrop Looms,

Twisters,
Warpers,
Spoolers,
Reels,

Banding Machines,

etc., etc.

Draper Company,
HOPEDALE,
MASS.

THE EMPHATIC SUCCESS OF OUR "IDEAL" AUTOMATIC LOOM IS DUE TO SEVERAL SALIENT POINTS OF SUPERIORITY OVER ALL COMPETITORS:

1st. The ease and smoothness with which they start up.

2d. The acknowledged superiority of the cloth woven.

3d. Simple and thoroughly mechanical construction, assuring freedom from the constant breakage and expensive repairs attending other automatic looms.

4th. No special bobbins, shuttles or other expensive parts.

5th. Ability to use cop or bobbin filling interchangeably.

6th. Superiority of warp stop motion which does not break or fray the softest yarn.

7th. Of the thousands in operation not a single bobbin or crank shaft broken.

IN PROOF OF CLAIMS WE POINT TO THOSE MILLS FORMERLY USING OUR COMPETITORS' LOOMS THAT ARE NOW USING OURS.

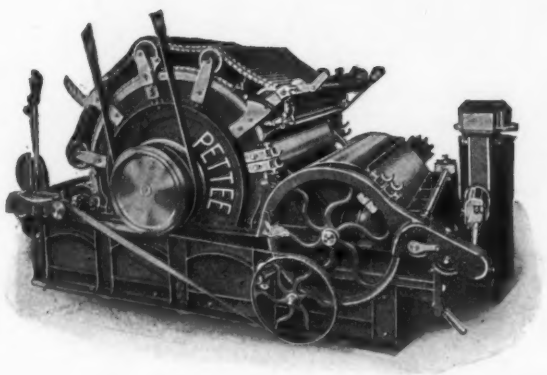
The Stafford Company

Readville, Mass.

Saco and Pettee Machine Shops

NEWTON UPPER FALLS, MASS., U. S. A.

COTTON MACHINERY



Revolving
Flat Cards,
Drawing
Frames,
Railway Heads,
Slubbing,
Intermediate
and
Roving
Frames,
Spinning Frames,
Spoolers
and
Reels.

Shops—

Biddeford, Me.

Newton Upper Falls, Mass.

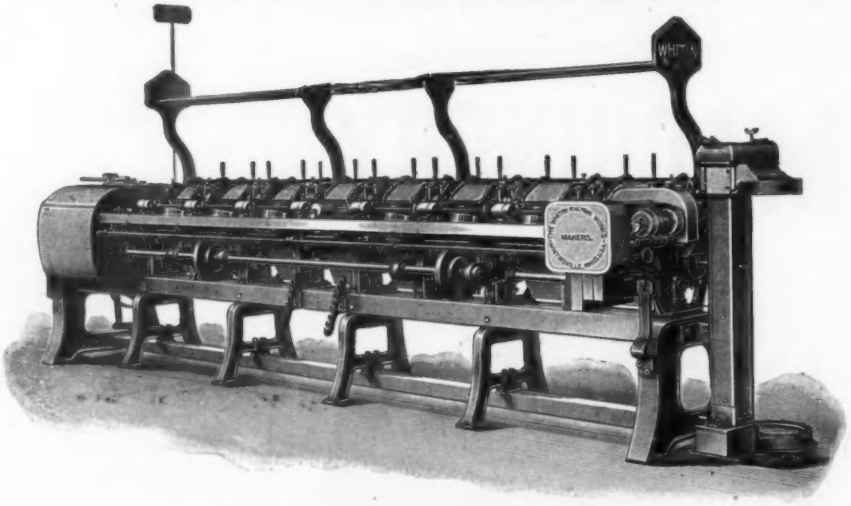
Southern Agent, A. H. WASHBURN, Charlotte, N. C.

THE

WHITIN MACHINE WORKS,

Cotton Machinery

WHITINSVILLE, MASS.



HIGH SPEED COMBER 1906 MODEL.

Revolving Flat Carding Engines,
Sliver Lap Machines,
Ribbon Lap Machines, Combers,
Railway Heads, Drawing Frames,
Spinning Frames, Spoolers, Twisters,
Long Chain Quilling Machines, Reels, Looms.

Southern Agent,
S. W. CRAMER

Trust Building, CHARLOTTE, N. C.
Equitable Building, ATLANTA, GA.

"Kitson Products"

Blowing Systems

For Conveying Bale Cotton
from Storehouse to Picker-room

Self-Feeding Openers
Lappers and
Cleaning Trunks

Waste-Working Machinery

Raw Stock Cotton Dryers

We own the Patterns and can furnish REPAIR PARTS for PICKERS
formerly built by

WHITEHEAD & ATHERTON, . Lowell, Mass.
ATHERTON MACHINE CO., - - Lowell, Mass.
A. T. ATHERTON MACHINE CO., Pawtucket, R. I.

Kitson Machine Shop

Lowell, Mass.

SCOTT & WILLIAMS

2079 E. Cumberland Street, Philadelphia, Pa., U. S. A.

BUILDERS OF

Full Particulars, Samples nnd Special Catalogues on Application.

Rib Knitting Machinery for Underwear and Hosiery

Plain, Single Lever or with Welt, Slack Course and Automatic Slackening Device for Welt.

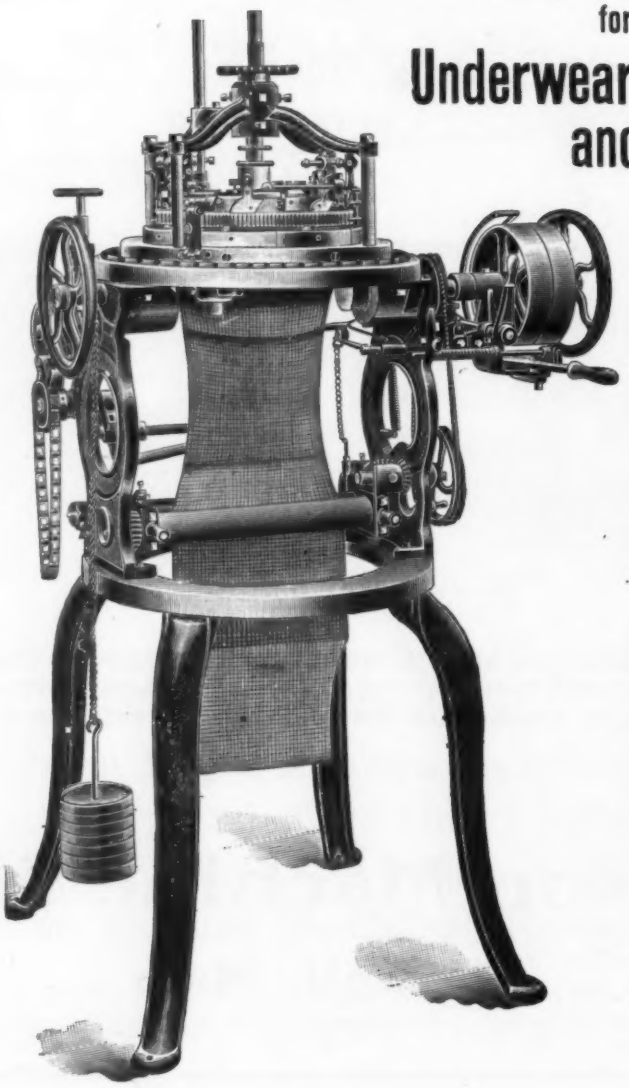
Improved Measuring Device, by actual length knit.

Sizes 8 to 24 inches, inclusive, varying by one inch.

Number of Feeds, 4 to 12, according to style and diameter of machine.

Solid Forged Steel Cylinders, specially hardened or with patent inserted walls for fine fabric.

Special Machinery for Sweaters, etc.



The illustration shows our

Improved High Speed Single Lever Automatic Ribbed Underwear Machine

for making ladies' and gents' ribbed underwear, union suits, etc., plain and shaped.

We build Loopers, Ribbers and other Machinery for Knitting Mills

As well as

A Complete Line of Full Automatic and 7-8 Automatic Seamless Hosiery Machinery.

Yarn in the shuttle is almost cloth.

Ordinary Bobbin in Shuttle

After it passes through the many costly processes of spinning and finishing,

Waste in the shuttle means manifold loss.

THE NEW UNIVERSAL FILLING BOBBIN STOPS THIS WASTE.

FURTHERMORE:

1. It contains from two to three times more yarn than the ordinary bobbin or cop, thus reducing materially the number of loom stops to replenish filling.
2. It delivers every inch of yarn in the shuttle without break or "slough off," thus largely reducing seconds.
3. It eliminates half the number of bobbins at present required.
4. It obviates conditioning to prevent kinking.

Write for Descriptive Circular of

THE

No. 90 Universal Bobbin Winder

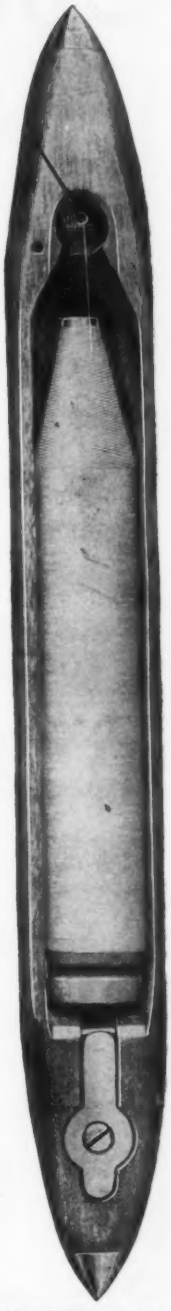
A SELF-OILING, HIGH SPEED MACHINE GIVING A MAXIMUM PRODUCTION IN A MINIMUM FLOOR SPACE.

UNIVERSAL WINDING MACHINES

are at present in successful use all over the world; they are built in various styles for **coning** and **tubing** of yarns single end, doubled for **twisting** and **multipled** for wire **insulating**, also for **thread, twine** and **cord**, as well as for **narrow loom quilling** and specialties: they are the **most economical** winding machines a mill can install because they are built for durability and turn off the **largest production** both per **spindle** and per **operative.**

Universal Winding Company

95 South St, BOSTON, Mass., U.S.A.



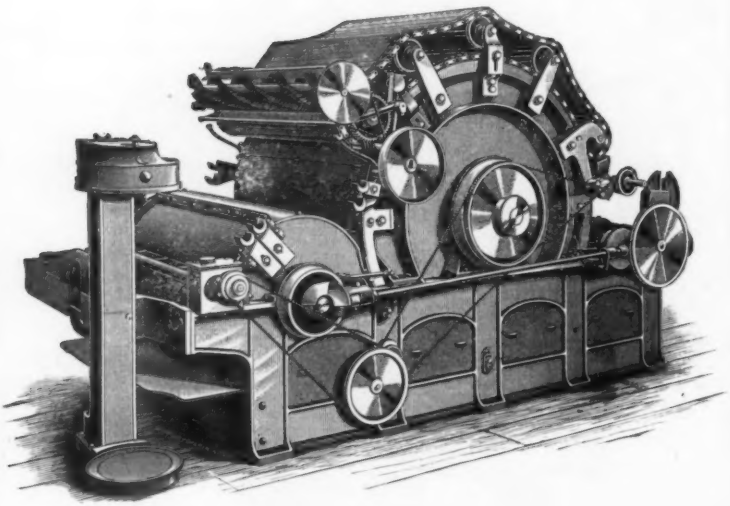
UNIVERSAL Bobbin in Shuttle

Cotton Machinery

MASON MACHINE WORKS,

TAUNTON, MASS.

Southern Office,
Charlotte,
N. C.



Cards,
Combers, Railway
Heads, Drawing Frames
Spinning Frames, Mules and Looms

INCLUDING

Plain and Fancy Silk Looms

EVAN ARTHUR LEIGH

232 Summer Street (opposite the South Station), Boston, Mass.

SOLE AGENT

IN THE UNITED STATES AND CANADA FOR

Platt Bros. & Co., Ltd.

BY FAR THE LARGEST MAKERS IN THE WORLD OF

Cotton, Woolen and Worsted Machinery

Platt's Patent Opening and Picking Machinery.
Platt's Cotton Comber will comb from 7-8" stock to Sea Islands.
Platt's Special Machinery for Making Cotton Waste into Yarns.
Platt's Special Machinery for Making French Worsted Yarns.
Platt's Woolen and Worsted Carding Engines, Special Designs.
Platt's Cotton, Cotton Waste, Woolen and Worsted Mules.

MATHER & PLATT, LTD.

Dyeing and Finishing Machinery.
Archbutt-Deeley System for purifying and softening water.

TEXTILE MACHINERY ASSOCIATION, LTD.

Flax, Hemp and Jute Machinery.

GEORGE HODGSON, LTD.

Looms for Worsteds, etc.

THE PATENT AUTOMATIC FEEDING MACH. CO., LTD.

Patent Feeding Machines for wool, cotton, flax, fur and fibrous material.

JOSEPH SYKES BROS.,
Card Clothing for Cotton.

JAMES CRITCHLEY & SON'S,
Card Clothing for Woolen and Worsted.

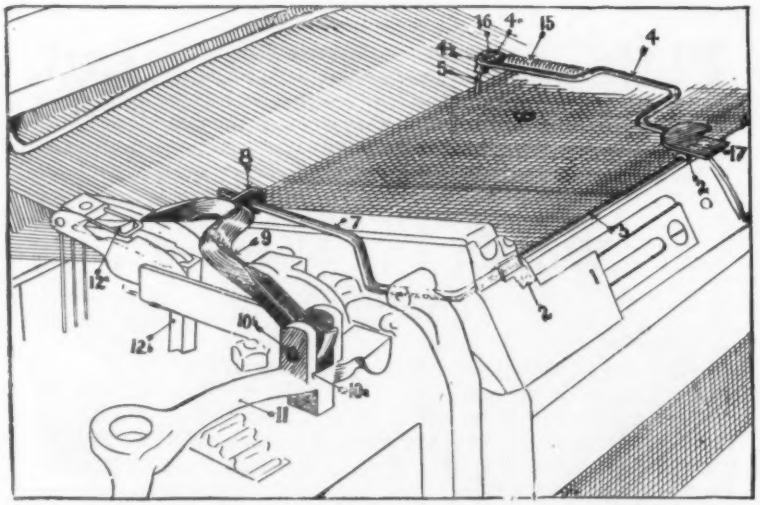
DRONSFIELD BROS'.

Grinding Machinery and Emery Filleting. The Best French and English Combing and Rubbing Aprons. Harding's Pins and Circles. Varey's Fallers, etc.

AS REPEAT ORDERS

are considered about the most complete indorsement—"actions speak louder than words"—we will, upon request, gladly submit for your consideration a little data along this line concerning SALES of the

CLAYTON & BENTLEY



Automatic Thin-Place Preventer

Many mill people who are now using this attachment on

Automatic Iron Breast Beam Looms, Single & Double Fork

on work ranging from 18 to 94 pick, and 2 to 20 harness, tell us, that by *preventing thin-places* it pays for itself **every ninety days to six months.**

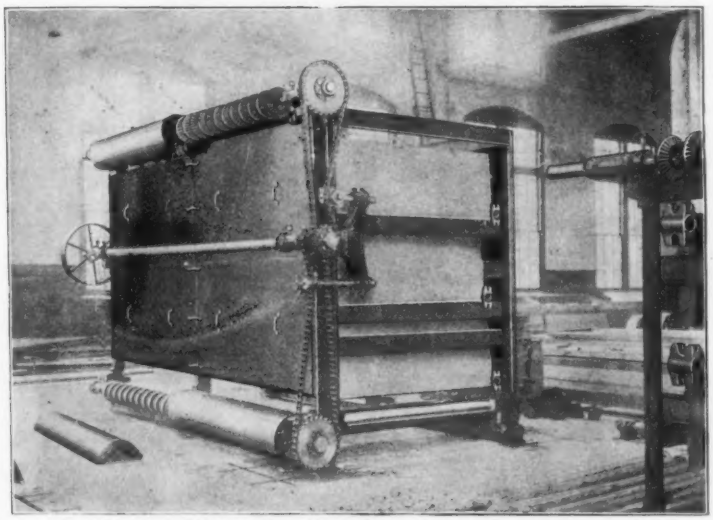
Samples and demonstration cost you nothing, and you incur no obligation to buy through requesting samples.

MANUFACTURED BY

CLAYTON & BENTLEY COMPANY,

ATLANTA, GEORGIA.

CELL DRIER MACHINE CO.
TAUNTON, MASS.

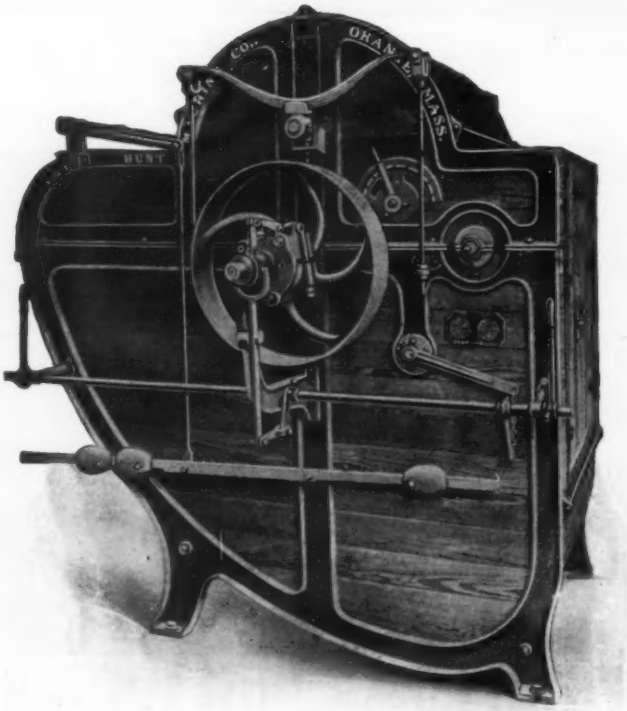


THE Cell Drier not only saves money in first cost, power and labor, but also gives improved service and increased output, besides taking but a small fraction of the space required by a cylinder drier.

Send for new illustrated bulletin containing detail information.

THE CELL DRIER

Rodney Hunt
MACHINE CO.
ORANGE MASS.



RODNEY HUNT-TYPE SH-FULLING MILL

Less cost to operate—by—more efficient design
Less first cost—by—more modern production
Less repairs—by—superior construction
Special Circular No. 301 tells why it has MORE CAPACITY and gives BETTER RESULTS
SOLD ON TRIAL
It will pay to investigate our

TEXTILE WET FINISHING MACHINERY

RODNEY HUNT MACHINE CO.

Branch Office: 70 Kilby St., Boston. - Main Office and Works: Orange, Mass.

JAMES HUNTER MACHINE CO.

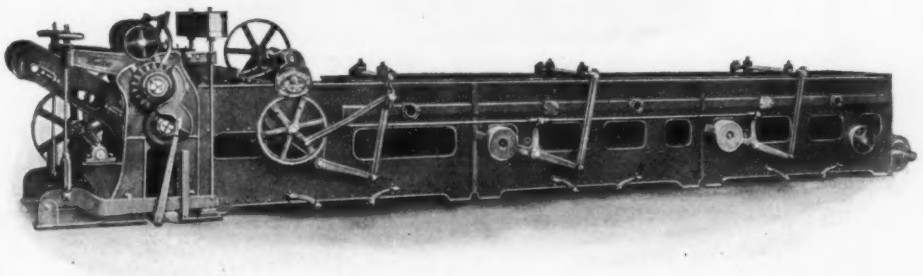
NORTH ADAMS, MASS., U. S. A.

Wool Washers. *Bulletin 54*

The Hunter

MODEL D

WOOL WASHER



Parallel Rake.

Not "A Has Been." Not "A Going To Be"
but a present day success.

Bowls 36″ or 48″ wide; 16-24-32 and 40 feet long.

Better work and more of it.
Large Settling Bowl giving clean scouring liquor.

Self Contained Flushing Appliance.

Better investigate.

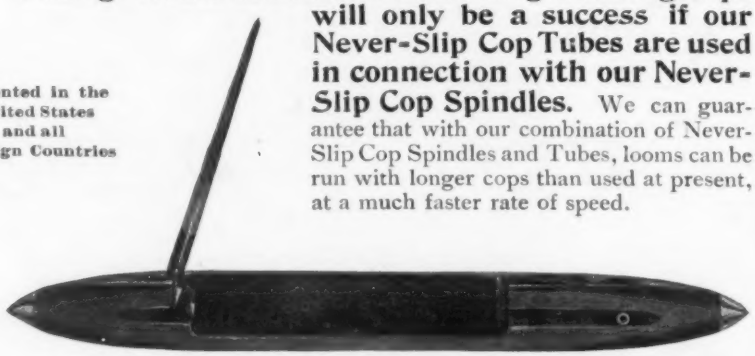
Never-Slip
Cop Spindles and Tubes

Never-Slip Cop Tube

Patent applied for.

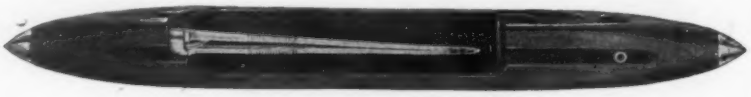
Filling-Waste is reduced to nothing and long Cops will only be a success if our Never-Slip Cop Tubes are used in connection with our Never-Slip Cop Spindles. We can guarantee that with our combination of Never-Slip Cop Spindles and Tubes, looms can be run with longer cops than used at present, at a much faster rate of speed.

Patented in the United States and all Foreign Countries



Shuttle with Spindle Raised

U. S. Patents: 778851, Jan 3, 1905; 790611, May 23, 1905; other patents pending



Shuttle with Spindle Lowered

U. S. Patents: 778851, Jan. 3, 1905; 790611, May 23, 1905; other patents pending

American Textile Specialty Machinery Co.

MANUFACTURERS OF

Shuttles and Shuttle Irons for all Textile Purposes.

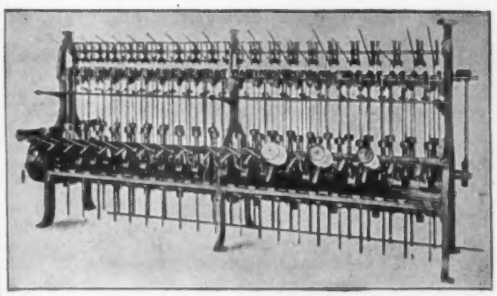
New York Office, 363-373 Rider Ave. **670 Eddy St., Providence, R. I.**

OSWALD LEVER CO.

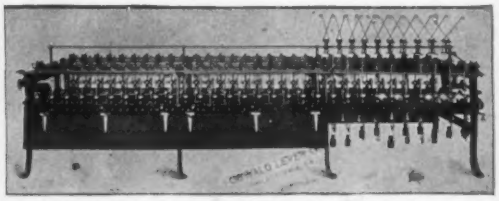
(Formerly LEVER & GRUNDY.)

MANUFACTURERS OF TEXTILE MACHINERY AND SOLE MAKERS OF OUR PATENTED SPECIALTIES IN THE UNITED STATES.

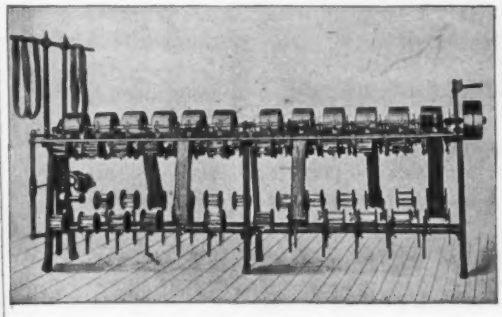
Conical and Parallel Tube Winding Machines; Warping Machines and Creels; Brass Bobbin Winding and other Machinery for lace mills; Chenille Cutting Machines, Sectional Warping Mills, Beaming Machines, etc.



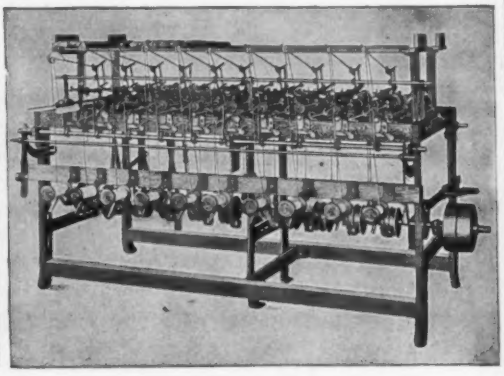
Vertical Spindle Gear Driven Winder, as used by all manufacturers of heavy duck, jute, cotton bagging and carpets.



Silk Winder to wind on Quills, Paper Tubes or Butts. The finest of cotton or silk.



Pressure Drum Spooling Machine. This machine is adapted for spooling any kind of yarn, whether from mule cops or skeins.

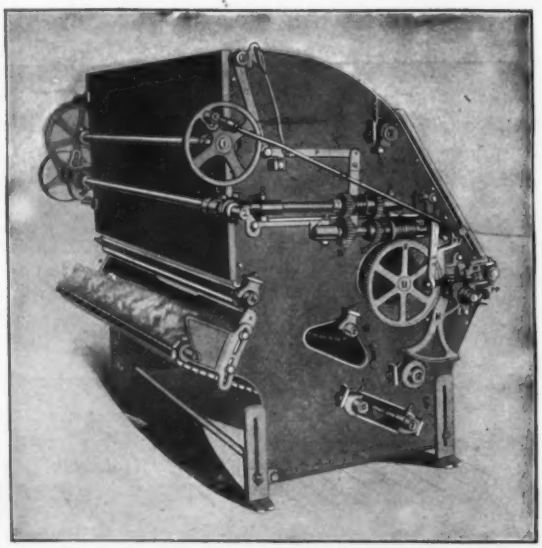


This Machine may be arranged to wind from skeins, spools, cones, or any kind of spinning bobbins. Most suitable machine for cotton or woolen blankets.

Cop Winding Machines for butts to weave from outside; Filling Bobbin or Quill Winding Machines; Vertical Spindle Spooling Machines for Silk, fine cotton, wool and worsted; Variable Speed Bobbin Machines for large bobbins used in knitting mills; Dresser Spooling Machines; Reeling Machines.

Lehigh Ave. and Mascher Sts., PHILADELPHIA, PA., U. S. A.

THE FISHER PATENT CARD FEED



Write Us For List of Mills Where Machines Are Used.

Woonsocket Machine and Press Company

WOONSOCKET, R. I.

PRACTICAL FIRE PROTECTION

If you want your mill buildings properly protected against the fire hazard, thereby obtaining the lowest insurance rates, you must have a supply of water which is instantly available under high pressure and absolutely independent of the successful or immediate operation of pumps or other machinery. The old method of storing such a supply was by wood tanks, generally built on top of buildings. As these tanks are short lived they soon become, themselves, a menace to the building instead of a protector. The sudden bursting of such a tank has often done as much damage as a fire. The up-to-date method of storing water is by means of a steel tank on a steel tower. We make a specialty of the design, manufacture and erection of these tanks of any desired capacity, in any part of the country, to meet any local conditions. Our tanks are recommended by the Factory Mutual Insurance Companies and endorsed by all of our past customers. We have built about seven hundred towers and tanks in all parts of the country, about 50 of which have been erected for Textile Mills. Every one of these is giving satisfaction. Write for booklet No. 7 which gives a list of all our customers with whom we invite you to correspond. The cut shows a tank which we built for the Belton Cotton Mills, at Belton, S. C. The large tank is kept full at all times for fire protection; the small one supplies water for use in the buildings.

Chicago Bridge and Iron Works

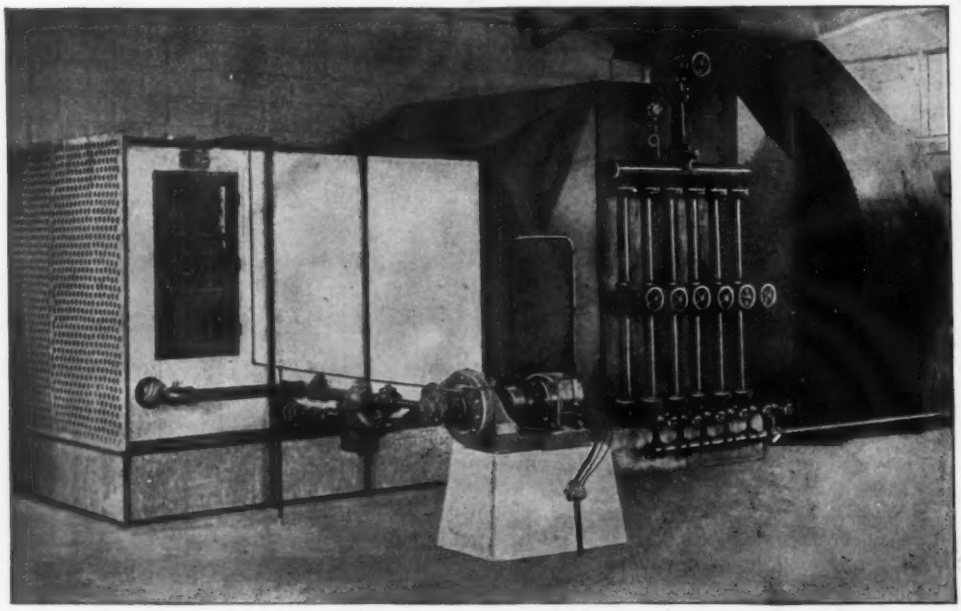
105th and Troop Sts. Chicago, Ill.

The Buffalo System
of
Atmospheric Conditioning

SCIENTIFIC and PRACTICAL

HUMIDIFIES—COOLS—CLEANSES—VENTILATES—HEATS

WITH PERFECT AUTOMATIC CONTROL



Write for Catalog 97 T. W., which illustrates and explains fully this distinct departure from other types of humidifiers.

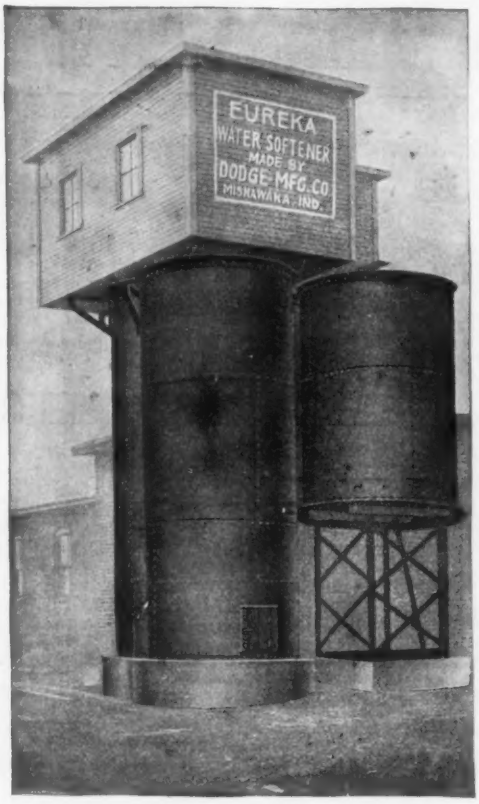
Buffalo Forge Co.,
Buffalo, N. Y.

Pure—Clear—Soft—Water

IS WHAT YOU NEED FOR

WASHING, SCOURING, BLEACHING, RINSING,
DYEING, FINISHING, LAUNDERING AND FOR

BOILER FEEDING



"Eureka" System at Des Moines (Ia.) Hosiery Mills.

It *increases* the Standard of your Product, and

Decreases your cost of manufacture.

It *economizes* in dyes, soap, alkali, repairs to boilers and in fuel consumption.

The Eureka Water Softening and Purifying System

Insures a Continuous, Uniform Water for all purposes, regardless of variations in the initial supply, be it stream, pond, lake or well.

The Investment

is reasonable, and cost of operation insignificant.

This System pays large dividends to the owner and carries the *DODGE* stamp of mechanical perfection

Our Red Book No. 3 contains full information, and is sent on request to all who are interested.

Dodge Manufacturing Company
Water Softener Dept. Mishawaka, Indiana

CORK INSERTS

(PATENTED)

have wide application in Textile Mills.

The Amoskeag Mills

(The largest cotton mills in the world)

are using 700

One Type of Loom Clutch

Cork Insert Loom Frictions

and constantly adding to the number of looms so equipped.

Worrall Clutches

Every Worrall Line Shafting Clutch in the Amoskeag Mills is fitted with Cork Inserts.

Motor Pulleys

Every Motor Pulley in these mills is now or is about to be fitted with Cork Inserts.

Dynamo or High-Speed Fibre-Faced Cork Insert Pulley.

Every one of the 1000 Looms in the Wood Worsted Mill is equipped with Cork Inserts, also both foreign and domestic Mules.

Many other large mills in New England and elsewhere are constantly increasing their Cork Insert equipment.

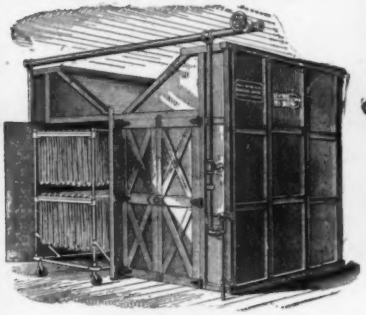
National Brake & Clutch Co., 16 State St., Boston.

"HURRICANE" DRYERS AND FANS

For Wool, Cotton Stock, Yarn, Stockings, Underwear, Etc.

BELT DRIVEN AND MOTOR DRIVEN

Power Screw Hydraulic and Lever **Presses**



Truck Yarn Dryer.

"Hurricane" Fan, Style No. 2. Write for Catalogues.

COMPLETE EQUIPMENTS FOR DYEING, SCOURING, BLEACHING, CARBONIZING, OXIDIZING, CHROMING, Etc.

PHILADELPHIA DRYING MACHINERY CO.

6721 Germantown Ave., Philadelphia, Pa.

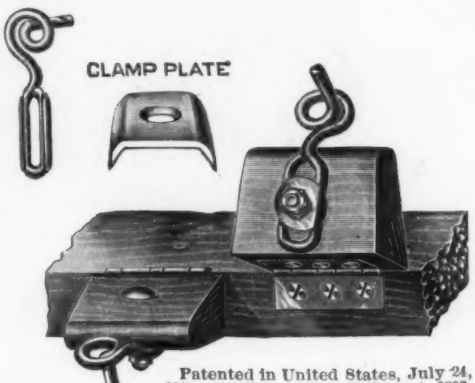
Palmer's Improved Adjustable Thread Guide

This guide supplies an accurate, rigid and permanent adjustment, and is attached to the ordinary spinning frame clapper. It has more merits than any other adjustable guide and at a greatly reduced cost. Perfect adjustment saves broken ends, abnormal wear of the rings, and increases the production and quality. Will soon pay for itself. *Send for free sample and circular.*

Patented and Manufactured by

The I. E. Palmer Co.

Middletown, Conn , U. S. A.

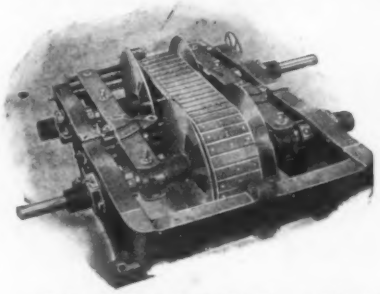


Patented in United States, July 24, 1906; April 9, 1907; and June 4, 1907. Japan, Oct. 12, 1906. France, Oct. 2, 1906. England, Sept. 13, 1906. Spain, July 23, 1906. Belgium, July 24, 1906 and Italy.
Patents applied for in the United States, Germany, Switzerland, Austria, Russia, Poland and India.

The QUALITY of the goods, as well as QUANTITY, is determined by the methods of manufacture.

THE MILL EQUIPPED WITH

"The Reeves" Variable Speed Transmission



for regulating the speed of the tenters, dryers, mangles, printing, bleaching, dyeing and mercerizing machines, etc., produces the best and the most at the lowest cost, because it gives the *exact speed* best suited to the work.

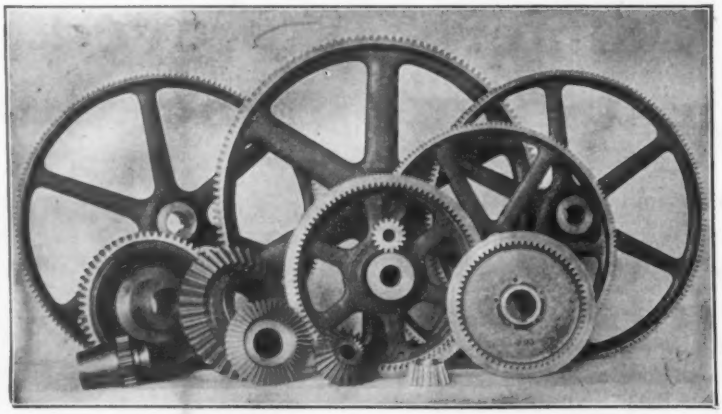
ASK THOSE USING IT.

REEVES PULLEY COMPANY,

Columbus, Indiana.

New England Agents,
Cell Drier Machine Company,
Taunton, Mass.

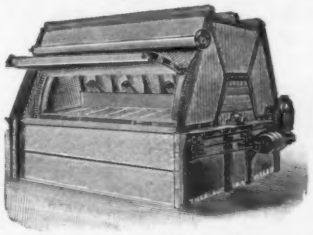
New York Representatives,
Patterson, Gottfried & Hunter,
146-150 Centre Street.



Gears For Prompt Delivery

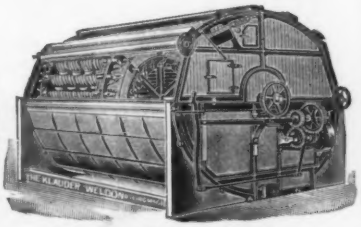
We make accurate gears in Spurs, Bevels, Internals, Spirals and Worms. Can furnish Cast Iron, Bronze, Steel, Fibre or our New Process Noiseless Gears. Let us estimate on your requirements.

The New Process Raw Hide Company, Syracuse, N. Y.



RAW WOOL AND COTTON MACHINE.

MACHINES
sold on
2 MONTHS' TRIAL
YOU
TAKE
NO
RISK

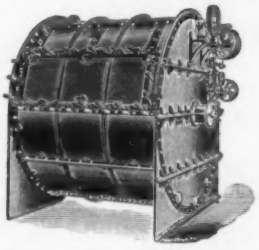


SKEIN AND SLUBBING MACHINE.

THE KLAUDER-WELDON DYEING MACHINE COMPANY

P. O. Box K, AMSTERDAM, N. Y.

Machines for Dyeing, Bleaching and Scouring Woolen, Worsted, Cotton and Silk Skeins—Slubbing—Raw Cotton and Wool, Waste, Rags, Shoddy, Hosiery, Underwear, Hats, Caps, Knit Cloth, Tapes, etc.



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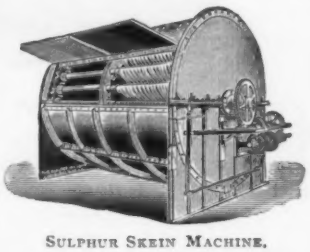
Special Machines for Sulphur Colors

WILL EARN THEIR COST IN
LABOR ALONE
IN FROM
6 TO 12 MONTHS
ACCORDING TO CAPACITY



SULPHUR SKEIN MACHINE.

LAWSONS

Hope Foundry, LEEDS, England

BRANCH OF

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MAKERS OF MACHINERY FOR

Preparing and Spinning

Flax, Hemp, Tow and Jute

Special Machinery
for the Manufacture of
Twines, Rope Yarns and Binder Twine

Good's Combined Hackling and Spreading Machine.

Long Reach Screw-Gill Drawing Frames. Chain-Gill Drawing Frames with Apron Heads.

Patent High-Speed Horizontal and Automatic Spinning Frames for Manila.

Improved Laying Machines.

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Brownell's Patent Twisting and Laying Machines for Twine.

N. B.—Complete Plans and Estimates for Flax, Tow, Hemp and Jute Mills, Trawl Twine Factories and Steam Ropeworks.

Farrel Foundry & Machine Co.

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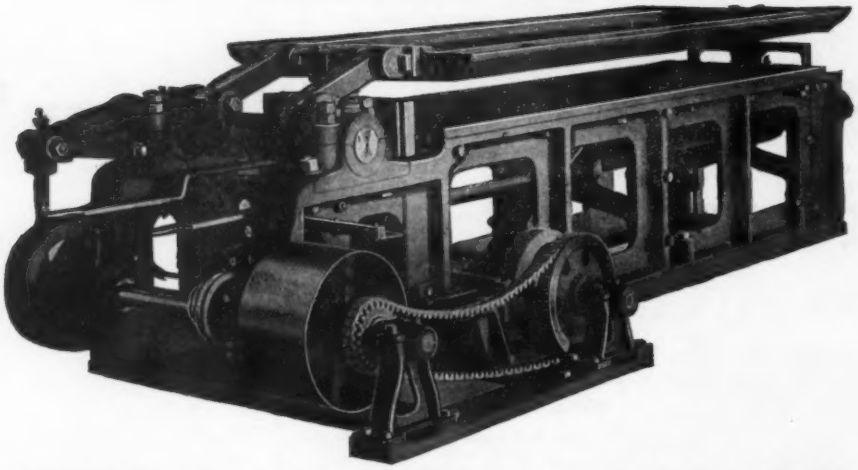


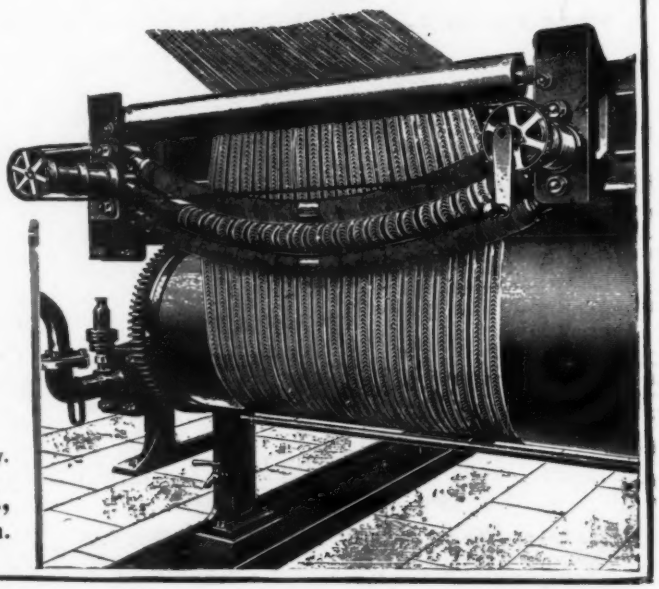
SINGLE AND DOUBLE FELT HARDENERS.

Chilled and Soft Iron Rolls. Heavy Transmission Machinery.
Machine Moulded and Machine Cut Gearing, to 20 ft. diameter, Etc., Etc.
Heavy Castings, in Gray Iron or Semi Steel.

Perfectly Even Tension Both Ways

THIS ideal cloth expander gets the full width of the goods in a most satisfactory way. Can be attached to calenders or cans. Hundreds in use in Great Britain and on the Continent—hundreds more in the United States, with constant satisfaction.

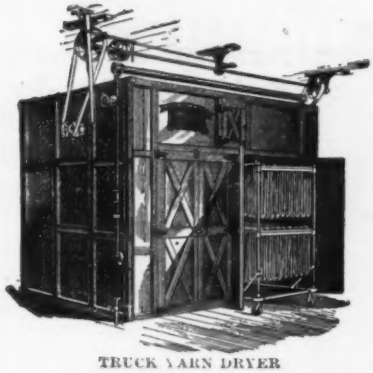
Manufacturers unsolicited say to us, "You have the greatest thing in a spreader ever brought to our attention."



We put them in on trial.
Test it on your own work—'t will pay.

Thomas Leyland & Co.,
60 India St., - - - Boston.

"20th CENTURY" MACHINERY



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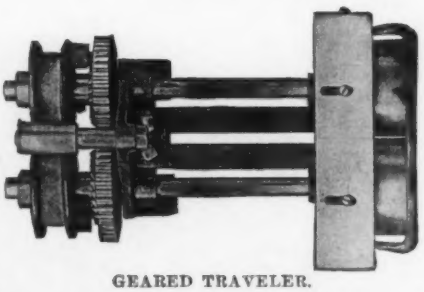
Dryers for Wool and Cotton Stock, Yarn, Stockings and Underwear.

Carbonizers, Yarn and Wool Scouring Machines.

Ventilating Fans, Bleachers.



GEARED TRAVELER.

We also manufacture Kershaw's Geared Traveler and Improved Web Feed.

Garnett Machines and Pickers. Reclothing or furnish New Metallic Toothed Cylinders and Feed Rolls.

DYEING MACHINES, TOM TOMS, CHROMING, WASHING AND OXIDIZING MACHINES.

AMERICAN DRYING MACHINERY COMPANY,

19th AND WESTMORELAND STREETS, PHILADELPHIA, PA.

Patented in the United States and Foreign Countries.

SEND FOR BOOKLET.

The American

WROUGHT STEEL

PULLEY

Is a parting PULLEY and can be applied without stripping the shaft.
It is Light, STRONG, and lasts a lifetime.
It clamps to the shaft perfectly — keys and set-screws superfluous.
Interchangeable metal Bushings to fit shafts of different sizes.
Particularly adapted to TEXTILE manufacturing.

Sold by the Leading Supply Houses all over the WORLD.

The American Pulley Co.,

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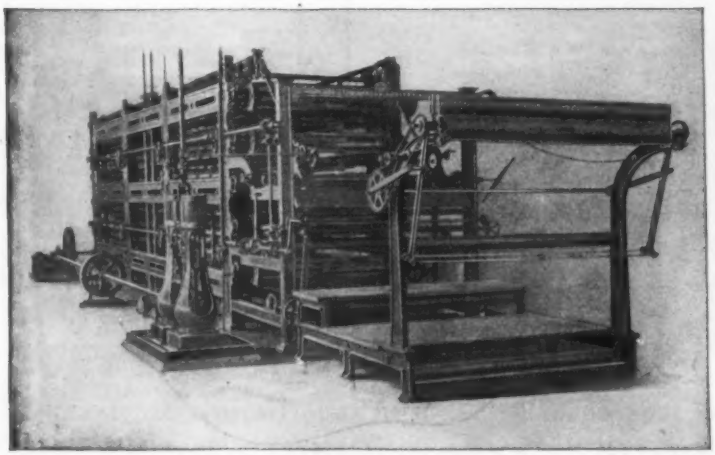
TENTERING AND DRYING MACHINES

WITH LOW DOWN FEED. PATENTED FEBRUARY 26, 1895.



Tentering and Drying Machines on Pipe System. Special Dryers for Heavy Felt Goods. Hot Air Drying and Tentering Machines.

Fulling Mills, Washers, Chinchilla and Whitney Machines, Whipping Machines, Cone Willows, Marsden & Blamire Lap Feed, Dyeing Machines for Piece Goods, Soaping Machines, Wringing Machines, Jigs (Double or Single), Dewing Machines, etc. Crabbing Machines for worsted. Made either single, double or triple.

MANUFACTURED BY

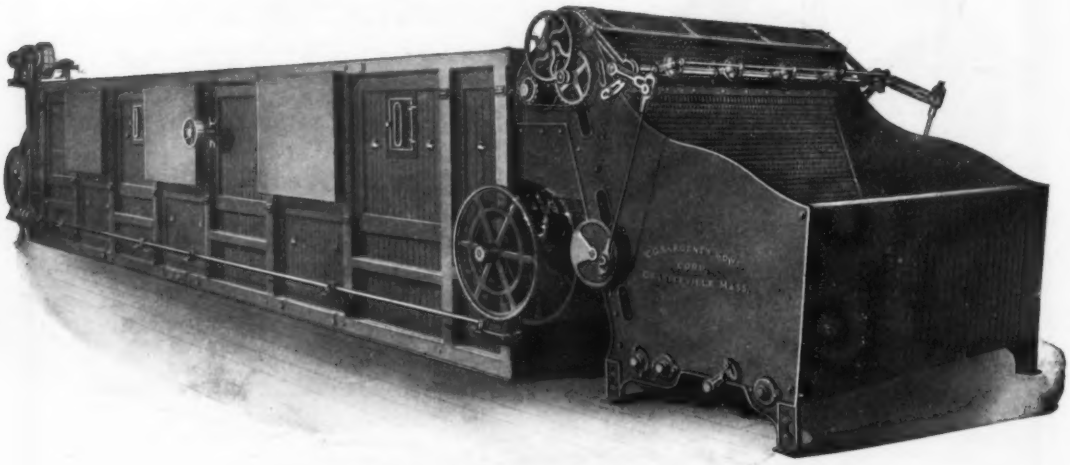
D. R. KENYON & SON, Raritan, N. J. Successors to KENYON BROS.

Long Distance Telephone—Somerville 21.

C. G. SARGENT'S SONS

CORPORATION

GRANITEVILLE, MASS.



BUILDERS OF

Stock Dryers, Wool Washers, Wool Dusters, Carbonizing Plants, Burr Pickers, Etc.

Berlin London Shanghai Vienna Budapest St. Petersburg Stockholm Kopenhagen

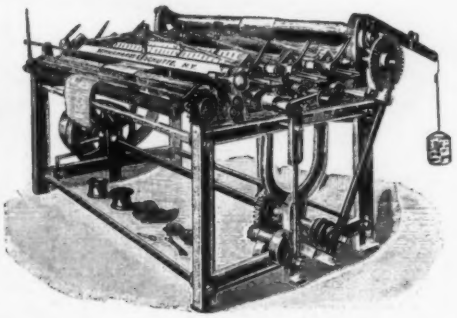
Schuchardt & Schuette

136 Liberty Street, New York.

Improved Finishing Machines

This illustrates our

No. 13 Pneumatic
Grinding and Polishing Machine.



Our line also includes

No. 19 Combined Steamer, wet and damp steam Dry Finishing Machine
No. 22 Gumming Machine. No. 23 Stretching and Drying Machine.
No. 28 Lacquering and Lustre Machine

CARBONIZING MACHINERY.

B Y C
TRADE MARK

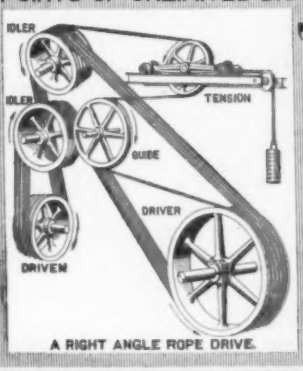
WHAT THEY SAY ABOUT THEM AFTER SIX MONTHS' USE

"Your machines have done better than you claim for them."

Barber-Colman Company 77-79 North Washington St. (cor. Thatcher), Boston, Mass.

BULLETIN ON ESSENTIALS OF ROPE DRIVING

FOR ECONOMICAL DISTRIBUTION OF POWER TO DIFFERENT POINTS OF UNLIMITED DISTANCES FROM THE SAME SOURCE



A RIGHT ANGLE ROPE DRIVE.

"ROPE DRIVING" IS THE METHOD.

LET US SUGGEST A DRIVE

GEO. V. CRESSON CO.
POWER TRANSMITTING MACHINERY
PHILADELPHIA AND NEW YORK

NOW READY FOR DISTRIBUTION. SEND FOR COPY

Soft Water for Textile Purposes.

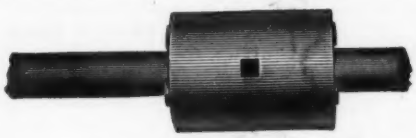
The advantages to be derived from the use of a

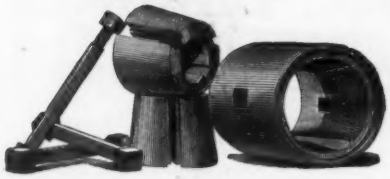
Bartlett Water Softener

in textile mills are described in our new catalogue.

Send for copy.

Northern Water Softener Company
Madison, Wisconsin.





THE "SELLERS" MAKE OF

DOUBLE CONE VISE COUPLING

has a way of holding shafts together, that no other COUPLING can equal.

WILLIAM SELLERS & Co., INCORPD.

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Makers of

SHAFTS,
COUPLINGS,
PULLEYS,
HANGERS,

and all most approved appliances for the Transmission of Power.

SEND FOR CATALOGUE AND PRICE LIST.

MACHINE TOOLS.

INJECTORS. POWER CRANES.

General Electric Company

ELECTRIC POWER EQUIPMENT

Curtis Steam Turbines in the Power House and General Electric Induction Motors in the mill constitute the ideal power equipment for the modern Textile Mill.

Mill specialists of 13 years' experience are at customer's service

Mill Power Office, 84 State St., Boston — Principal Office: Schenectady, N. Y. — Sales Offices in all large cities.

NEW YORK OFFICE, 44 Broad Street. BALTIMORE OFFICE, Continental Trust Bldg.

PHILADELPHIA OFFICE, Witherspoon Bldg. ATLANTA OFFICE, Empire Building.

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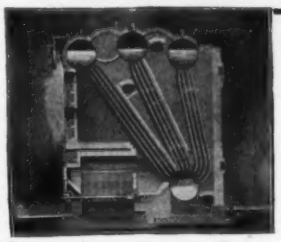
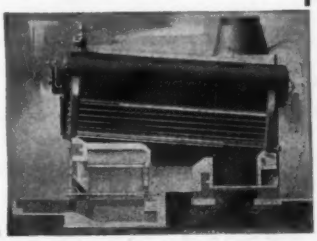


The Murphy Automatic Smokeless Furnace

Burns Slack with Great Economy

The Murphy can be installed under any type of fire-tube or water-tube boiler and to units of any size.



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MURPHY IRON WORKS

DETROIT, MICH.

WM. FIRTH, Pres. EDWIN BARNES, Vice-Pres. JOHN H. NELSON, Treas.

WILLIAM FIRTH CO.

Post Office Square Building 79 Milk Street, BOSTON, MASS.

. . . SOLE IMPORTERS OF . . .

ASA LEES & CO., Limited,

TEXTILE MACHINERY,

OF EVERY DESCRIPTION FOR COTTON, WOOLEN AND WORSTED.

SOLE AGENTS FOR

JOSEPH STUBBS, Gassing, Winding and Reeling Machinery for Cotton, Worsted and Silk

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GEORGE ORME & CO'S Patent Hank Indicators, etc.

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LOCKETT, CROSSLAND & CO., Engravers and Builders of Leather Embossing Machinery, etc., etc.

R. CENTNER FILS, Heddles.

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DRONSFIELD BRGS., Limited, Emery Wheel Grinders. Emery Fillet and Flat Grinding Machines.

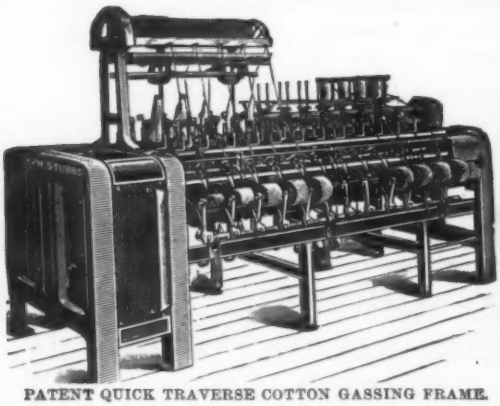
COTTON CORD AND VELVET CUTTING MACHINE CO., Corduroy Cutting Machines, etc.

PICK GLASSES, LEATHER APRONS, PATENT WIRE CHAIN APRONS.

JOSEPH STUBBS - - Manchester, England.

SPECIAL MACHINERY

For Winding, Gassing, Reeling, Preparing, Polishing and Bundling Yarns.



PATENT QUICK TRAVERSE COTTON GASSING FRAME.

IMPROVED RABBETH SPINDLE WINDER.
With Patent Tapering Motion, for Single Flanged Bobbins.

Sole Agents for the United States and Canada.

WILLIAM FIRTH COMPANY, Post Office Square Bldg., 79 Milk St., BOSTON, MASS.

DOBBINS' ELECTRIC SOAP, ABSOLUTELY PURE AND UNIFORM.

Dobbins' Hard Water Soap, a Specific for Hard Water or Water Charged with Chemicals.

AMMONIATED POTASH SALTS FOR SCOURING.

Dobbins' Palm Oil Fulling Soap. Dobbins' "Fast Black" Soap. Pure Olive Oil Potash Soaps.

FREE SAMPLE SENT FOR TRIAL ON REQUEST.

DOBBINS SOAP MANUFACTURING CO., 119 SOUTH FOURTH STREET, PHILADELPHIA, PENN.

Established 1865

Jacob K. Altemus

2824 North 4th St., Philadelphia, Pa.

My Business Is—

¶ To keep in touch with every kind of fabric, how they are made and what is needed;
¶ To meet the requirements of successful operation, get quality and quantity of output and economy in production;
¶ To produce the machinery needed for the highest development of the various departments;
¶ To command confidence and respect in all business relations;
¶ To secure and maintain such relations is my constant aim and sole object.
¶ To have a reputation that shows both confidence and square dealing.
¶ To know that my methods are appreciated and make greater efforts in the future.

Information regarding machines now in use and for future requirements solicited. To those interested, a descriptive list of machines guaranteed to give results will be sent.

Textile Machinery for all kinds of Yarns.

WHAT THE OWNERS AND ENGINEER OF ONE OF OUR RECENTLY COMPLETED JOBS SAY OF THE WORK OF THE GILBRETH ORGANIZATION

THE OWNERS' LETTER

COLUMBIAN ROPE COMPANY, AUBURN, N. Y.

Frank B. Gilbreth, January 7, 1908.
34 West 26th Street, New York City.

Dear Sir: In reply to your esteemed favor of the 2d, would say that the new mill which you have recently had contract with us to build is about completed, and the work has been in every way satisfactory as far as you or your representatives are concerned.

This is the second large mill you have built for us and we shall be pleased to take up with you the subject again when we build the third one, because we can only testify to the push, energy, efficiency and uniform courtesy of your men in charge of construction.

We shall in the future—as in the past—be pleased to answer any reasonable inquiries in regard to your work for this company. Yours truly,

(Signed) **COLUMBIAN ROPE COMPANY**
By Edwin D. Metcalf, President.

THE ENGINEER'S LETTER.

CHARLES T. MAIN, Mill Engineer and Architect.
45 MILK STREET, BOSTON, MASS.

Mr. Frank B. Gilbreth, January 13, 1908
34 West 26th Street, New York City.

Dear Sir: I desire to express my entire satisfaction with the manner in which you have constructed the original plant of the Columbian Rope Company at Auburn, New York, and the jute mill which has recently been added to the plant.

I would say also that all other work of which you have had charge from my office has been carried out expeditiously, carefully, and economically. Very truly yours,

(Signed) **CHARLES T. MAIN**

THE BUILDING.

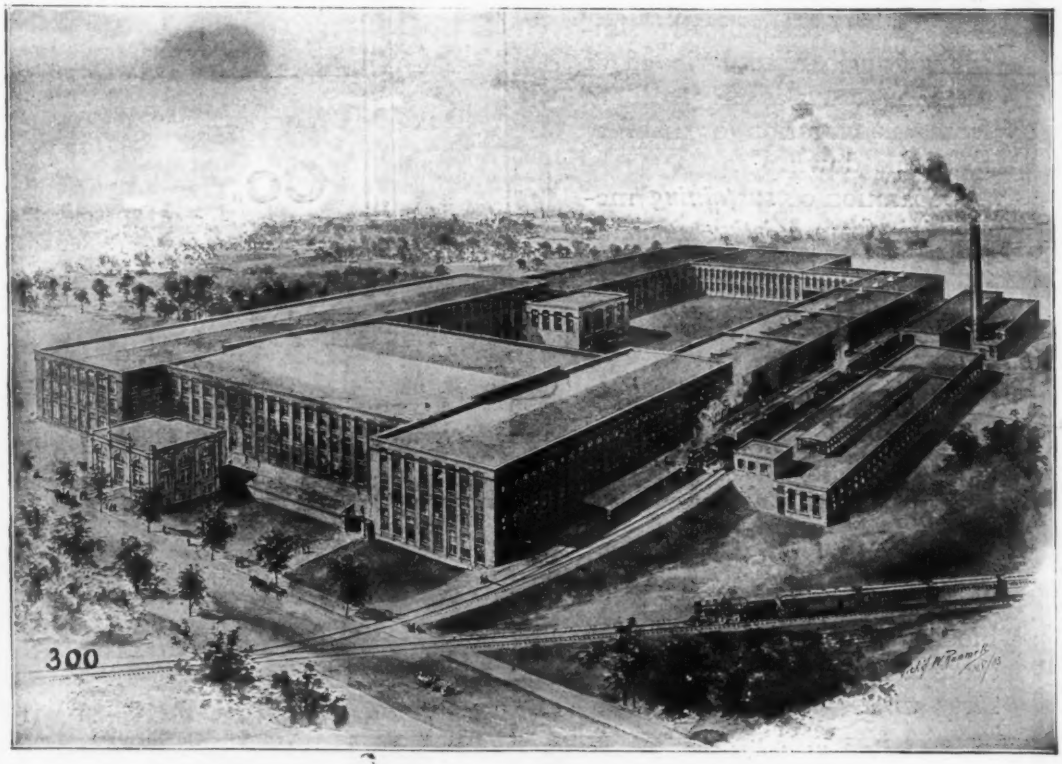
FRANK B. GILBRETH,

GENERAL CONTRACTOR,

34 West 26th St., New York. 604 Mission St., San Francisco

WHAT THE OWNERS AND ENGINEER OF ONE OF OUR RECENTLY COMPLETED JOBS SAY OF THE WORK OF THE GILBRETH ORGANIZATION

¶ The mill referred to in the letters and which is shown on the opposite page is 585 feet long. It is an addition to the complete plant which we built for the Columbian Rope Company, covering about eight acres. The view of this plant below affords an excellent idea of its magnitude. Ten months and six days after the first survey of the site by Messrs. Dean & Main, the engineers, the plant was producing rope. The buildings are over an eighth of a mile in each direction. The chimney is 150 feet high. Horses and carts transported the material from an adjoining spur track up inclined planes to the various floors, and there unloaded it at points nearest to the bricklayers and carpenters. All of this work was done under the cost-plus-a-fixed-sum contract—the only contract under which our organization does work.



FRANK B. GILBRETH,

GENERAL CONTRACTOR,

34 West 26th St., New York, 604 Mission St., San Francisco

The Triumphant Triplex

THE installation of Triplex Blocks in the foremost industrial plants of the world is due to this invincible combination:

Scientifically simplified mechanism, stripped of all useless parts, insures freedom from jar, vibration or liability to break down.

Separation of ***sustaining*** mechanism from ***hoisting*** mechanism means saving and utilization of the power wasted in blocks where friction is relied on to sustain the load.

Mechanical efficiency of ***more than 80 per cent.*** means ***outlifting and outlasting*** any other block in points of economy, ease and safety.

Triplex Blocks do as much work in thirty minutes as other blocks do in an hour. Made in sizes to lift from one-half to forty tons.

Drop us a line for illustrated literature.

The Yale & Towne Mfg. Co.
9 Murray Street, New York

SPINDLES

EASTON AND BURNHAM MACHINE CO.

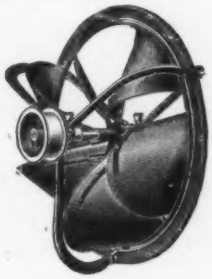
PAWTUCKET, R. I.

REPAIRS FOR RABBETH SPINDLES

Drying that's ideal—
done with a Berry Wheel

In representative mills the Berry System of drying is doing most efficient and economical work. Tell us your requirements and we will tell you what a Berry Wheel will do for you.

This is our Berry Wheel, the most effective agent for moving air, eliminating steam and other impurities in the atmosphere.



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23 West First Street,
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E. B. BADGER & SONS CO.
ESTABLISHED 1841
COPPERSMITHS

STEAM JACKET KETTLES

Guaranteed to stand 150 lbs. cold-water test.

Equal, if not Superior, to any in the market

66 Pitts St.
BOSTON
Mass.

It Attracts Universal Attention Because it is THE BEST

BADGER'S
Fire Extinguisher

Has taken the lead in the United States, and is everywhere recognized for its efficiency. After competitive tests, lasting more than one week, THE UNITED STATES GOVERNMENT placed an order for 1,200 of

BADGER'S THE LATEST AND MOST APPROVED
Automatic, Chemical, Hand Fire Extinguisher Made

BADGER FIRE EXTINGUISHER CO.
42 Portland St., Boston, Mass., U. S. A.

Crabbing, Steam Finishing, Opening and Folding, Tacking, Sewing, Squeezing Machines

BIRCH BROTHERS, SOMERVILLE, MASS.
ALBERT BIRCH, TEXTILE MECHANICIAN

Bleaching and Napping Machinery

WILSON & CO., BARNSLEY, Limited

Absolutely secure combination of Shield and Bobbin guaranteed.

Loose Shields Impossible.

BARNSLEY, ENGLAND.

Specialties: PATENT "LOCKFAST" and "CLIMAX" Shields. ENAMELLED CONDITIONING BOBBINS, Impervious to Steam, Moisture or Oil.

TRADE MARK.

GOLD MEDAL St. Louis, 1904. DIPLOMA d'Honneur Liege, 1905 Highest Awards for Bobbins.

Added Strength and Absolute Security.

Samples and Prices on Application.

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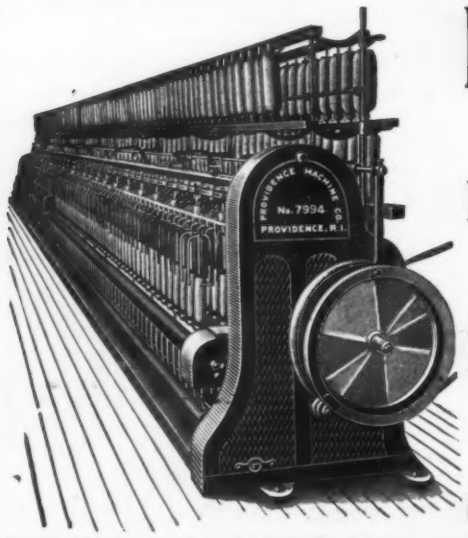

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Manufacturers of

Improved Cotton Roving Frames

Improved Worsted Roving Frames

564 Eddy St., - - PROVIDENCE, R. I.

WILLIAM BODDEN & SON, Limited

The "BODDEN" Flyer

For QUALITY OF FINISH
For QUANTITY of PRODUCTION
HAS STOOD THE TEST OF YEARS

Sole Agents for U. S. A.

Thomas Mayor & Son, Olney Street, Providence, R. I.

WILLIAM FIRTH, Pres. THE FRANK B. COMINS, Vice-Pres. and Treas.

AMERICAN MOISTENING COMPANY

79 Milk Street, Boston, Mass.

Received the HIGHEST AWARD on recommendation of the FRANKLIN INSTITUTE for

"Simplicity and Originality of Design."

Is the largest manufacturer of HUMIDIFIERS in the World. The last twenty years receiving the HIGHEST AWARD in this country and Europe for its AIR-MOISTENING SYSTEM. EIGHT GOLD MEDALS and others.

The Only Perfect System of Air Moistening

Has Been Adopted by the Representative Manufacturers of this Country.
The only System adopted in the Textile Schools. Write for booklet "T" on Humidification.
Legal proceedings will at once be taken against infringers and users of infringements.

J. S. COTHRAN, Southern Representative, Trust Bldg., **CHARLOTTE, N. C.**

FIG. 20.

If you have not used a

Lane Canvas Box, Basket or Truck

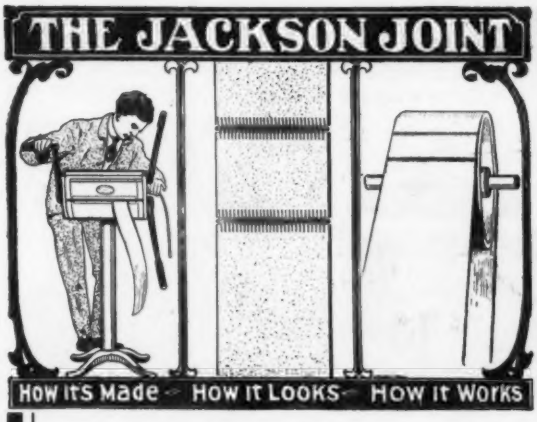
in your mill, you have yet to learn what highest grade material and superior methods of construction and workmanship, as exemplified in the Lane product, can do to remove your basket troubles.

Sold direct or through principal Supply Houses.

See our Descriptive Catalog and Price List No. 37.

MANUFACTURED ONLY BY

W. T. Lane & Brother, Office & Works **Poughkeepsie, N. Y.**



The Jackson Belt Lacer

A **simple, efficient economical machine** that laces a 5" belt in 3 minutes at a cost for material of less than one cent.

The Jackson Joint

Convenient, durable and **compact.** It withstands 700 lbs. tensile stress per lineal inch of the steel wire lacing and passes over

The Smallest Pulley

without slipping, pounding or strain.

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Birdsboro Steel Foundry & Machine Co.,
BIRDSBORO, PA.

Hydro-Extractors, Exhaust Fans, Dye Tanks and Tubs.

Adjusts itself to an uneven load, runs without vibration. Unusual capacity for high-class work.

Send for Catalog.

Tolhurst Machine Works,

Fulton St. and 6th Ave.,
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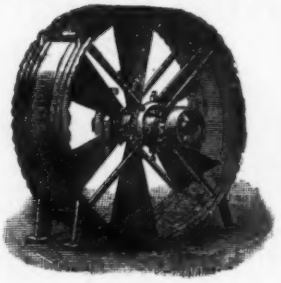


Moves more air than any other fan made. Very efficient under widely varying conditions. Noiseless and does not obstruct the light.

SALEM ELEVATOR WORKS

SALEM, MASS.

ELEVATORS

ESPECIALLY ADAPTED FOR MILL USE.

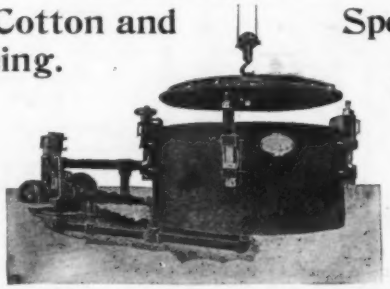
SEND FOR ILLUSTRATED CATALOGUE AND ESTIMATE.

Our latest Vacuum Dyeing Machine

WRITE US FOR PARTICULARS

For Raw Stock, Cotton and Wool Dyeing.

The only perfect machine for Sulphur Black Dyeing.



Special Advantages

Condition of Stock,
Durability,
Production,
Labor Saving.

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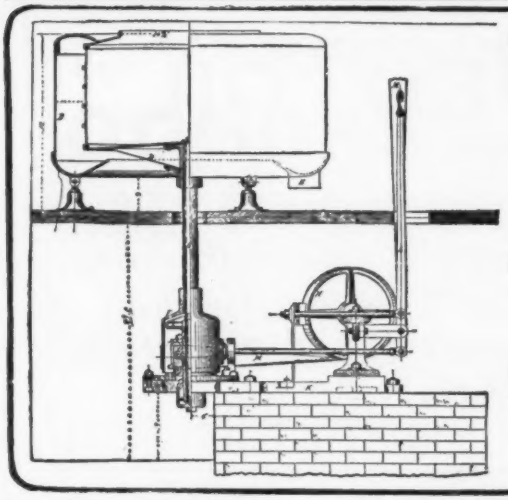
59 AND 61 PEARL ST., NEW YORK.



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Special Machines for Acid Work.

SHAFTING, PULLEYS,
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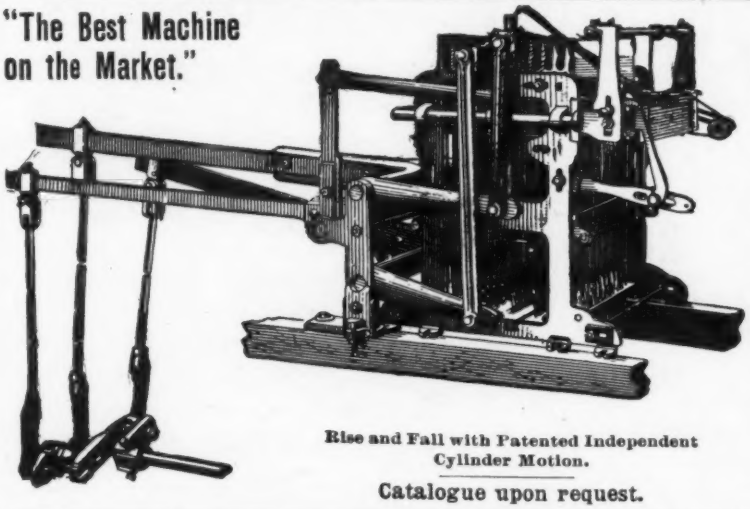
American Tool and Machine Co.,

Incorporated 1864 Founded 1845.

109 Beach Street, Boston, Mass.

"The Best Machine on the Market."



Rise and Fall with Patented Independent Cylinder Motion.

Catalogue upon request.

USE THE

HALTON JACQUARD

Original Fine Index Machines

Single Lift, Double Lift, Double Cylinder, Rise and Fall, Crossborder.

THOMAS HALTON'S SONS,

Allegheny Avenue and C Street,

PHILADELPHIA

Representative
H. A. Forbes, Paterson, N. J.

STEAM TRAPS

NEW FEATURES: Wearing Parts, Valve and Seat Renewable.

Class A Return Trap

We manufacture Steam Traps for all duties, High and Low Pressures, returning the Condensation back into Boiler or Discharging to Hot Well, Tank, or Atmosphere.

No Elastic Gaskets, all Joints Ground Metal and Metal.

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Catalogues A, B and C

ALBANY STEAM TRAP CO.

ALBANY, N. Y.

Established 1870.

JAMES H. BLESSING, Pres. THOS. F. RYAN, Sec't'y & Treas.

Eureka Fire Hose

THE BEST FIRE HOSE MADE.

(Trade Mark.)

For use in

Cotton Mills, Woolen Mills and Factories.

Seamless Woven and Rubber lined EUREKA COTTON HOSE, has no equal. Send for circular and testimonials.

Awarded Gold Medal at the St. Louis Exposition, 1904.

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13 Barclay St., New York, N. Y.

"SAPONIFIED OIL"

(BRETON BRAND)

BRETON OIL FOR WOOL TRADE-MARK

gives a perfect emulsion with the use of water only. Assures free and easy scouring of yarn and cloth. Can be used either in emulsion or straight. Order a trial barrel—sent subject to your test and approval.

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80 South St., New York

Boston Fall River Philadelphia Works: Claremont, N. J.

DINSMORE

Mill Sewing Machines

No. 9.—Portable Foot-Power Rotary Sewing Machine

It is especially adapted for use in Cotton and Woolen Mills, Bleacheries, Print Works at the Printing Machines, in Dye Works, Cloth Rooms, at the Fulling Mill, Shears, Calendars, Gigs, Drying Machines, etc., or any of the different finishing processes in textile mills.

Manufactured by the

DINSMORE MANUFACTURING CO.,

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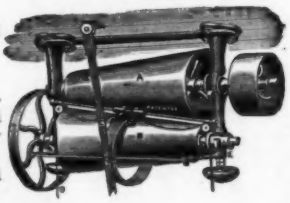
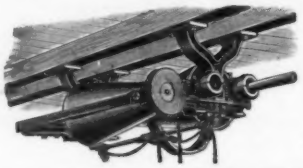
Variable Speed Countershafts

The Evans Friction Cone Pulleys



will drive your machines at any desired speed from 1 to 6 by simply pulling a cord. They are guaranteed to do your work.



We'll furnish them for either floor or hanging use.
Over Ten Thousand Sets in Operation in this Country and Europe.
Send for Catalogue.

EVANS FRICTION CONE COMPANY
G. Frank Evans. - Newton Center, Mass.

1866 1908

HARTFORD STEAM BOILER INSPECTION AND INSURANCE CO. HARTFORD, CONN

41st Annual Statement

January 1, 1908

Capital, $1,000,000.00
Surplus, 1,006,868.06
Reserves, 2,053,326.74
Assets, 4,060,194.80

The HARTFORD was the Pioneer Company in the field of Steam Boiler Insurance, and it is the only company which makes a specialty of and does exclusively a steam boiler inspection and insurance business.

The HARTFORD is the only company whose entire talent and energies are applied to the study of steam, to the scientific construction and installation of boilers, and to their periodical inspection by expert mechanics.

The HARTFORD is the only company whose entire assets and resources are held exclusively for the protection of steam users, and the payment of losses occasioned by the explosion of steam boilers and for no other hazard whatsoever.

The HARTFORD is now doing nearly nine-tenth of the Inspection and Insurance of Steam Boilers in the New England States, and nearly two-thirds of the entire amount done throughout the United States.

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F. B. Allen, Vice-President.
C. S. Blake, Secretary.
L. F. Middlebrook, Assistant Secretary.

Hartford, Conn.

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19 Federal Street, Room 58 Boston, Mass.

Autogenous Welding

AND

Ferrofix Brazing Processes

are the methods by which we make

Broken Machinery

as good as new and it costs far less

The *new* methods; Most efficient and best in every way. *All* original strength restored at very low cost and in shortest time.

Shuttle Boxes, Frames, Gears, Racks and all Textile Machine Parts of Steel, Iron Copper, Brass or Aluminum.

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For Sale.
Welding Plants—Ferrofix Brazing Compound.

THE AMERICAN FERROFIX BRAZING CO.,
1515 SANSOM STREET, PHILADELPHIA

Shultz Sable Belting

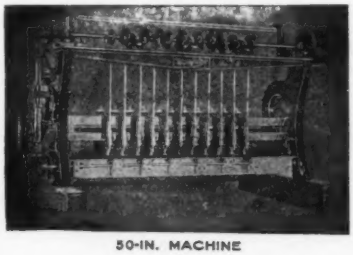
is by far the least expensive although its first cost is a trifle higher than that of oak-tanned belting. Remember that Sable being tanned on the outside only, has (1) a soft surface which runs slack without slip, and (2) a rawhide interior, which gives strength, life and pliability. Sable transmits from 1/4 to 1/3 **more** power because it runs with low initial tension and does not overheat the bearings nor seriously wear them.

Try a Sable Belt for 60 days, Free. Write for Booklet and Free Sample.

The Shultz Belting Company

ST. LOUIS, MO.

New York Boston Philadelphia



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L. F. FALES

MANUFACTURER AND BUILDER OF

SEWING MACHINES

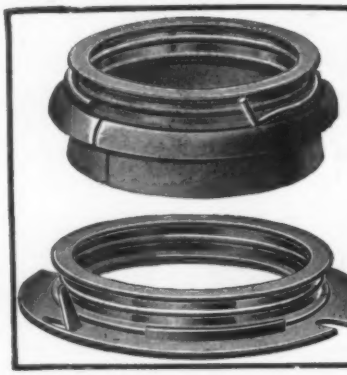
FOR ALL PURPOSES WHERE A NUMBER OF ROWS OF SEAMS ARE REQUIRED

BUILT WITH ANY REQUIRED NUMBER OF NEEDLES

DESIGNER OF SPECIAL MACHINERY

WALPOLE, MASS. U. S. A.

PAPER SLITTING MACHINES



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TWISTER RINGS.
RING HOLDERS.
TRAVELER CUPS.
SILK RINGS.
TRAVELER CLEANERS.

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WHITINSVILLE SPINNING RING CO.,
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New Bedford Textile School

Day and Evening Instruction in

Picking,
Carding,
Combing,
Spinning,
Warp Preparation,
Weaving,
Designing,
Knitting,
Chemistry and Dyeing.

CATALOGUE ON APPLICATION.

Address

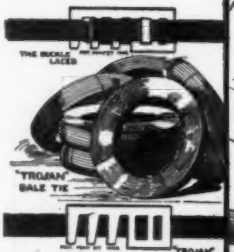
New Bedford Textile School
New Bedford, Mass.

If you are using rope for baling you are helping to pay the gas bill to keep rope prices balloon high.

Rope is up—*Trojan Bale Tie* and *Band* is down.

Trojan Band is made plain or galvanized in coils from 2000 to 3000 feet without a break. Widths ½, ⅝, ¾ and 1 inch.

With the present high prices of rope Trojan Band and Buckle is a money saver.



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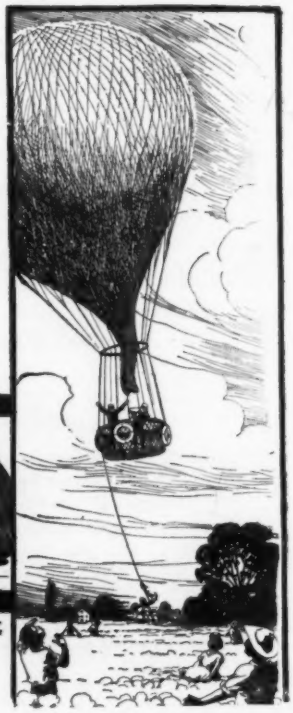
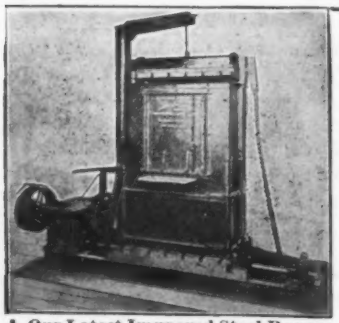
Brooklyn, N. Y.
Chicago, Ill.





Our Latest Improved Steel Power Press with New Steel Link Chains

Minnich Baling Press

for all kinds of products.

Must turn out more bales with less labor and power than any press in the market.

Send for circular.

Minnich Machine Works,

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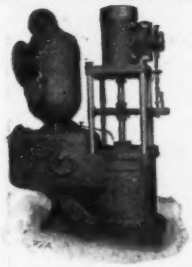
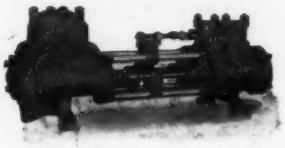
DEAN BROS. STEAM PUMP WORKS

INDIANAPOLIS, IND.

DUPLEX PUMPS, SIMPLE PUMPS
ATLANTIC BOILER FEEDERS
JET AND SURFACE **CONDENSERS** ELECTRIC PUMPS BELTED PUMPS, Etc.



VERTICAL AIR PUMP AND JET CONDENSER



DUPLEX DURABLE PUMP

SIMPLE PUMP

TWIN AIR PUMP AND CONDENSER

LUG STRAPS

EVERY SIZE AND KIND

TRADE MARK

We carry in stock all the ordinary sizes of duck and ticking lug straps and promptly make to order any sizes which are out of the ordinary.

LOOM PICKERS
LOOM HARNESSES
PICKER LOOPS

GARLAND MFG. CO., SACO, MAINE

(Formerly Loom Picker Co., Biddeford, Maine)

Manufacturers of and Dealers in

WROUGHT AND CAST IRON PIPE

for steam, water and gas.

BRASS, COPPER AND LEAD PIPE.

Iron and Brass Fittings, Valves, Etc.
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Steam and Hot Water Heating Apparatus.

Steam Specialties, Pipe Fitters' Tools, Etc.

PIPE CUTTING A SPECIALTY.

PREVENT ROT AND DECAY

FLOORS, SILLS, JOISTS, TRESTLES, DYE TANKS, VATS
or other Woodwork can be successfully preserved
by applying Avenarius Carbolineum, the
great German Wood Preservative.

Applied with brush or by dipping Always ready for use. On the market since 1875.

TELL US WHERE YOU ARE HAVING TROUBLE AND WE WILL MAKE A RECOMMENDATION.

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Established 1870

John Heathcote & Son

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Builders of Improved

Cloth Tentering and Drying Machinery

for WOOLENS, WORSTEDS, FELTS, etc.

Built Upright or Horizontal with Low Down Feed

Ventilating Fans a Specialty

Send for Catalogue

"No Waste"

THE ONLY

Seamless Hard Fibre Roving Can.

The highest type of Roving Can ever produced.

Made from Pure Chemical Hard Fibre, without **seams** or **rivets**, absolutely smooth, and of incomparable durability.

Supplied with our Seamless Protection or Kicking Band, with either an electrically welded steel top ring, or a smooth turned fibre top, and with either a wooden or metal bottom secured with a seamless steel bottom ring.

Thousands of these **"No Waste"** Cans now in use and endorsed by the leading and most representative inills in the United States and Canada.

WE ALSO MAKE A HIGH GRADE OF

Cordage Cans	Comber Boxes
Oval Cans	Doffer Boxes
Waste Cans	Bobbin Boxes
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Write for prices.

STANDARD FIBRE CO.

SOMERVILLE, MASS.

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TWENTY-FOURTH YEAR

Oldest in America

Most Complete in the World

Endorsed by the Leading Educators and Manufacturers

Cotton, Wool, Worsted and Silk

Instruction given in Designing, Weaving, Carding, Spinning, Chemistry, Dyeing and Finishing

Special Courses in Textile Chemistry and Dyeing

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E. W. France, Director,

Broad and Pine Streets - - - - - Philadelphia

NEW ENGLAND BUTT COMPANY,

304 PEARL ST., PROVIDENCE, R. I.

BRAIDING MACHINERY

ALL STYLES AND KINDS FOR FLAT AND ROUND BRAIDS.

SOLID SASH AND CURTAIN CORDS,

SHOE AND CORSET LACES, BANDING

AND ALL BRAIDED FABRICS.

Do you trade-mark your goods?

¶ If so they should not be disfigured by the uneven impressions of a hand stamp. **Use Kaumagraph Stamps** —the scientific method—and your goods will be adorned with the real imprint of quality. The whole problem of Textile Stamping is solved in using Kaumagraph Stamps. Samples sent on request.

THE KAUMAGRAPH CO., 156 5th Avenue, New York

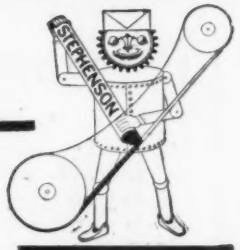
Caution!

DO NOT BUY FROM INFRINGERS OF THIS DECISION, given in the United States Circuit Court for the Northern District of Illinois, Eastern Division, Nov. 18, 1907.

The Gandy Belting Co. of Baltimore City is the true and lawful owner of the goodwill of its business of manufacturing and selling **Red Stitched Cotton Duck Belting** accompanied by the distinctive trade mark, trade name or trade designation: "Gandy" or "Gandy's" applied thereto or used in connection therewith."—"It is further decreed that the defendant be perpetually restrained from selling, advertising or supplying stitched cotton duck belting printed or dyed red, accompanied by the word "Gandy" affixed or applied thereto."

There is but one Gandy belt; no other is so good, or can show such conclusive proofs of superior efficiency, economy, and durability. Send for our booklet.

GANDY BELTING CO.
BALTIMORE, MD.



Took us years to learn

that a Pound STICK of

Stephenson
Bar Belt Dressing

1⅞ inches in diameter is the size that best suits most men. It has just the right "feel" to it in your hands. ¶ Clean to handle; easy to apply (friction on the belt heats it,) always to be relied upon where a belt slips. STEPHENSON Dressing reflects credit on the maker, the seller and the user. Quality dressing for Quality folks. ¶ Your hardware store will sell you as little as a box of a dozen pound sticks, or give you a free sample to test.

In either case look for the Cog Wheel Face.

Red Label for Leather Belts. No ONE kind is good for ALL belts— You know that. **Green Label for Rubber or Canvas.**

Handles heavy cases in a Time-Saving Way—The Economy Steel Tiering Machine

Goods are put in place with ease and economy. The largest amount of stock can be stored in the smallest possible space and yet be instantly accessible. In use in representative mills. Investigate its merits and 'twill be in use in yours. Write for prices.

Economy Engineering Co. 58-64 N. Jefferson St. Chicago, Ill.

To the Manufacturer who Invites Success!

THE HENDERSON CARD

will increase your carding and improve the quality of your yarn with less waste, greater strength and increased production over any other system.

James H. Whittle Co. 150 Harlow St., Worcester, Mass.

Successors to the Cleveland Machine Works

Owners and manufacturers of the celebrated **Henderson Card** for Wool, Worsted, Cotton, Waste, Flax and Asbestos. Also manufacturers of

All Kinds of Woolen Machinery.

Creosoted Flooring

is laid just like any ordinary flooring, but there the likeness ends. Once laid it is there to stay until worn out.

Creosoted Flooring

never rots under any conditions, therefore greatly lessens the outlay for **Dye House and Wet Finishing Room Floors and is ideal for all wet places.** It does away with the loss and annoyance caused by frequent renewals

Meets Textile Needs.

Tell us your requirements and we will tell you the cost.

THE BARBER ASPHALT PAVING CO.,
Maurer, N. J.

The "Reliance"

brand of oak tanned, short lap leather belting is so generally specified by discriminating buyers, because Experience has taught them that it is the best and therefore the cheapest.

Write for catalog and prices to

Chicago Belting Company,
Chicago and Philadelphia.

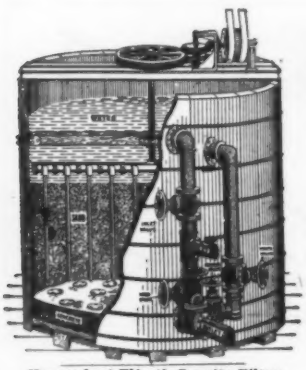
HYMAN SUPPLY CO., Wilmington, N. C.
MALLARY MILL SUPPLY CO., Macon, Ga.

HUNGERFORD & TERRY

Pressure and Gravity Filters
Water Softeners

Filtration Engineers

1412 Pennsylvania Building
PHILADELPHIA
PA.



Hungerford-Elfreth Gravity Filter.

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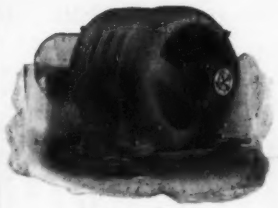

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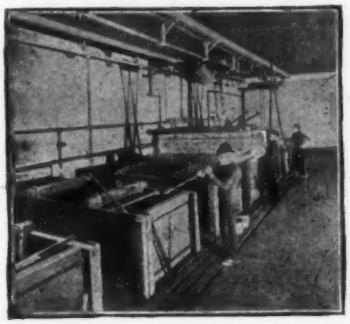

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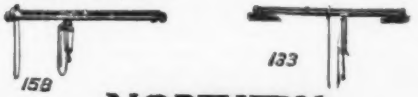

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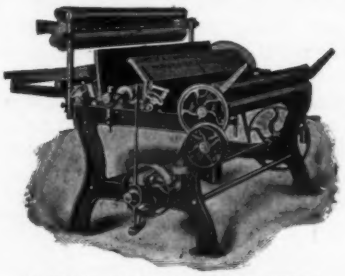

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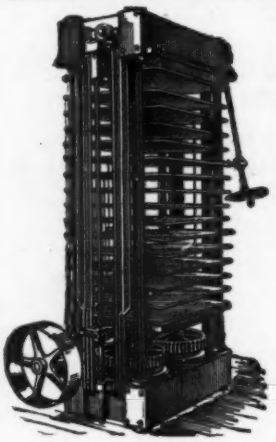

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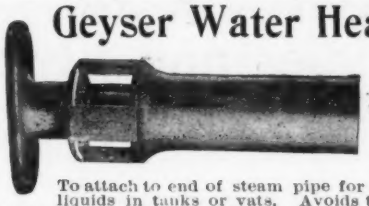

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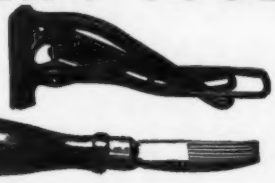

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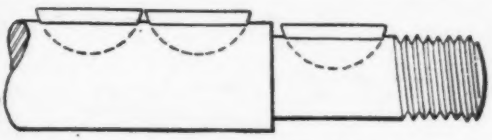

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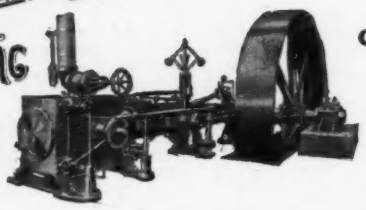

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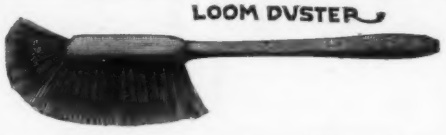

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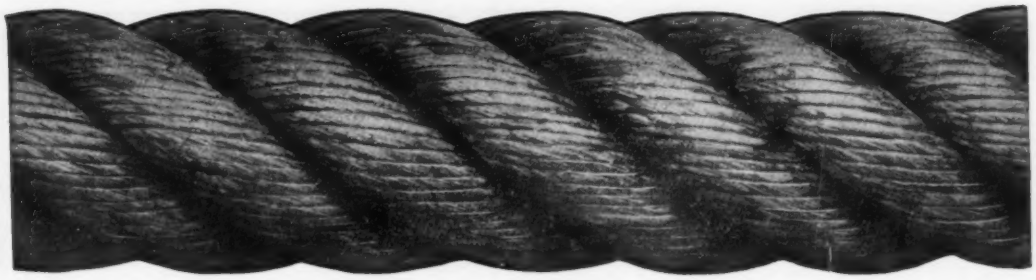

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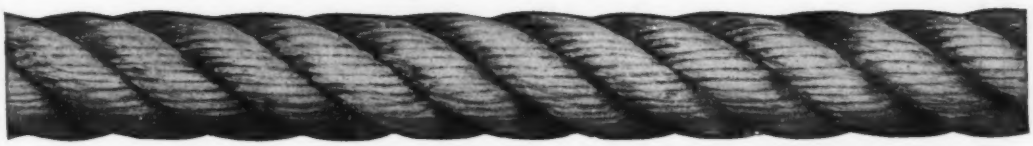

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Publication and Editorial Office

144 Congress Street, Boston.

119 South 4th Street, Philadelphia. 123 Liberty Street, New York.
463 East 42nd Street, Chicago.

Entered at the Boston Post Office as Second Class Mail Matter.

Subscription Rates.

Textile World Record in United States and Mexico	$2.00 per year
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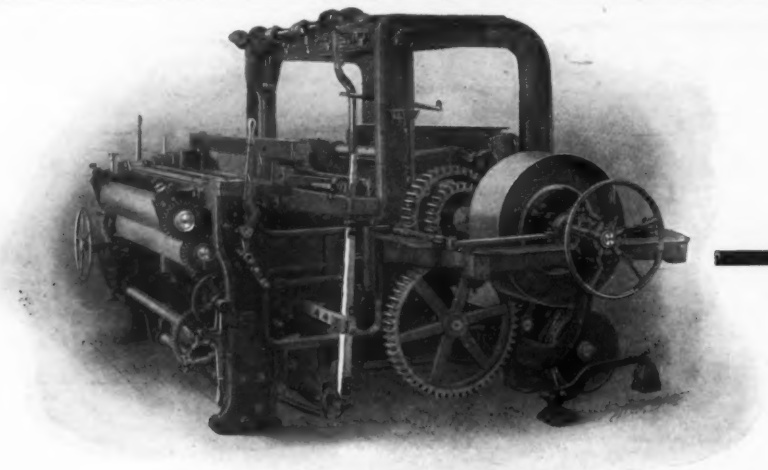

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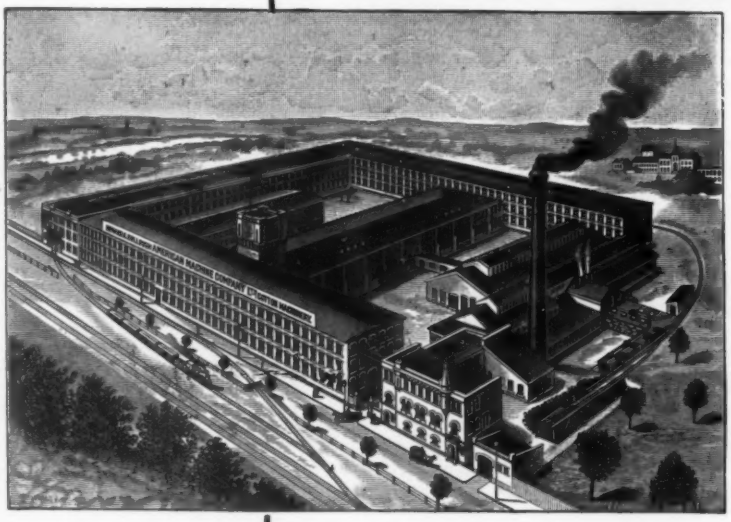

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The Textile World and Textile Record.

VOL. 34 (NEW SERIES.) March, 1908 No. 6

Monthly Comment.

The Lace and Net Trade.

The financial crisis and resulting commercial depression in America exerted an immediate and very serious effect on the lace and net trade at Calais. In a recent issue l'Industrie Textile states that three-quarters of the lace-making establishments at Calais are closed and that as a result there is much privation and suffering among the people of that city. In ordinary times Calais annually produces goods for export to the value of $24,000,000, which is about three-quarters of the total product of the Calais mills. In 1906, the latest year for which statistics are available, the oversea trade of Calais in lace and net was divided as follows between the two principal countries:

Cotton Lace.

United Kingdom	109,188 lbs.
United States	1,274,821 lbs.

Cotton Net.

United Kingdom	106,957 lbs.
United States	176,191 lbs.

Silk Lace.

United Kingdom	234,769 lbs.
United States	224,596 lbs.

These figures show without further comment the importance of the American market to the lace makers of Calais. The great prosperity that has prevailed during recent years makes the present depression more serious than it would otherwise have been. During the fat years many of the workpeople invested their savings in small lace-making establishments, and now have neither money nor work. The number of lace machines at Calais increased from 2,000 in 1900 to 3,000 in 1907. According to the census of 1907 there were 30,700 operatives employed in the lace mills at Calais, of whom 7,500 were men, 21,000 women, and 2,200 children.

Guarding Secret Processes.

The care taken by European manufacturers to exclude visitors from their mills is well known. In the case of the large majority of the mills this precaution is unnecessary as far as guarding secret processes is concerned. There are, however, some textile mills, especially dyeing and finishing works, which employ processes that may be called secret, that is, known only to the managers and particular employers. In guarding these processes against disclosure to outsiders the manufacturers are aided by the government, which promptly enforces stringent laws designed to protect the possessor of industrial secrets. This is illus-

trated by a recent incident at Gruenberg, of which the following account is given by the Textil-Zeitung:

The English Woolen Manufacturing Co. at Gruenberg, Germany, uses certain secret processes for printing half wool goods. A short time ago a man in the employ of Adolf Loew & Son, woolen manufacturers at Helenenthal, Austria, called on Mr. Hahn, the dyer at the Gruenberg works above named, and tried to induce him by the promise of a large sum to reveal the printing recipes. Hahn, the dyer, at once reported the matter to Dr. Ostensetzer, the manager of the works, who went to the government attorney for protection against such methods of injuring the home industry. The Austrian agent was arrested the same day after he had paid the first sum of 100 marks to the dyer and received a receipt for it.

Wages of Silk Weavers at Crefeld.

A strike for higher wages in the silk mills at Crefeld, Germany, that has been going on for several weeks, recently ended with the return of the operatives to work at the old rate. The struggle incidentally disclosed the rival claims regarding wages paid in the Crefeld mills. The strikers claimed that a silk weaver could not earn over $3.60 a week. The mill owners' reply to this was a statement of wages paid last year to 1754 weavers in 33 Crefeld mills. The average for the men was $5.66 per week; for the women, $4.91. The highest rate among the former was $6.51 a week; among the latter, $5.54. It is stated that the wages paid in Crefeld are considerably higher than prevail among silk mills in other sections of Germany.

Alongside of this German exhibit we present the following letter from a New Jersey silk manufacturer, in reply to our request for information regarding the wages earned by silk weavers in American mills:

Editor Textile World Record:

Nearly all weavers in Paterson and vicinity are on piece work and their earnings depend on their skill, on the class of work, and on the steadiness of employment. For weaving on jacquard or box looms, a higher degree of skill is required. The supply of well skilled labor is not any too large, and this labor is mostly male. This class of work naturally warrants a better wage than the same weavers could earn on plain goods. The male weavers generally earn more than the female.

With steady work, good and well prepared silk, and good management, I think that for Paterson, Union Hill and vicinity the following figures would not be far from the mark for weaving broad silk:

Women, on plain goods	$10.00 to $11.00
Men, on plain goods	$11.00 to $12.00
Men, on fancy goods	$12.00 to $14.00

There are many who earn more and quite a few who earn less. Individual earnings will vary widely, but for a period of say six months, the above wages would be a fair average.

The wages of ribbon weavers are higher.

Silk Manufacturer.

A comparison of the wages in the two countries discloses the difference which makes a protective tariff necessary for us. This fact cannot be emphasized too often or too strongly.

More Manufacturing Plants Move to England to Save Their Patents.

Important additions have been made to the list of firms forced by the new British patent law to establish works on British territory.

The new law in force since January 1, this year, says in effect that if an invention patented in the United Kingdom is worked abroad it must also be worked in the United Kingdom, otherwise the British patent may be revoked.

This law does not force inventors to work their patents. Under it a patented invention may remain unworked.

The new law prevents foreign monopolies from operating in foreign countries while under the protection of British patents they refuse to work their inventions themselves or let others work them on British territory.

Patentees have until Jan. 1, 1909, to save their old patents by working the inventions in the United Kingdom.

Since our last issue the following companies have taken steps to save their British patents:

5. The United Shoe Machinery Co., of Massachusetts are to build more of their machines in England to prevent revocation of their patents. For this purpose they are enlarging their works at Leicester, England. This transfer is due to the compulsory working clause of the British patent act, and not, as has been reported, to the recent Massachusetts legislation aimed at the business

methods of this corporation. This is proved by the fact that the new British Patent Act contains even more stringent provisions against such methods. For example section 38 reads as follows:

(1) It shall not be lawful in any contract made after the passing of this Act in relation to the sale or lease of, or license to use or work any article or process protected by a patent, to insert a condition the effect of which will be:—(a) To prohibit or restrict the purchaser, lessee, or licensee from using any article or class of articles, whether patented or not, or any patented process, supplied or owned by any person other than the seller, lessor, or licensor or his nominees; or (b) To require the purchaser, lessee, or licensee to acquire from the seller, lessor, or licensor or his nominees, any article or class of articles not protected by the patent: and any such condition shall be null and void, as being in restraint of trade and contrary to public policy.

6. The Badische und Sodafabrik, Ludwigshafen am Rhein, Germany, is preparing to establish branch works in England.

7. The Aktiengesellschaft fuer Anilinfabrikation, of Berlin, Germany, is negotiating for a site for branch works in England.

In addition to the above reported since our last issue there are the following which were previously reported:

1. An American manufacturer of safety razors is to establish works, giving employment to 500 hands at Sheffield, Eng.
2. The Hoechst Farbwerke, German manufacturers of artificial dyestuffs, have purchased ten acres of land at Ellesmere Port, on the Manchester ship canal, where works are now being built for manufacturing dyestuffs for the British and American markets.
3. The Farbenfabriken of Elberfeld Co., another of the leading German dyestuff companies, is to build branch works near Manchester, Eng.
4. The J. P. Bemberg Aktiengesellschaft, of Oehde, near Barmen-Rittenhausen, Germany, is to establish a branch in England, for the manufacture of artificial silk.

Trade at St. Gall.

Now it is the embroidery trade at St. Gaul that supplies an illustration of the industrial interdependence of widely separated parts of the world. The recent financial disturbance in the United States resulted in the cancellation or withdrawing of orders for foreign goods. The effect of this has been especially severe at St. Gall and a general shut down, throwing a large number of operatives out of work, is planned. Firms controlling half of the machines in the St. Gall district have signed an agreement to curtail. This is being done in various ways, by a complete shut down of the works, by shutting down for one to three days a week, and by cutting the daily working time. Similar conditions are reported from Calais, Chemnitz and other European manufacturing centers having a large American trade.

The Reform of Cotton Exchanges.

We print in another part of this issue an editorial by Harvie Jordan on "The Legitimate Cotton Exchange," in which he not only states his own views, but gives the opinions of a number of men who have carefully studied the question. We commend this addition to the discussion of a subject bristling with knotty problems, because of the desire it indicates to reach the correct solution, its recognition of the inherent difficulty of the undertaking, and the valuable suggestions from both Mr. Jordan and his correspondents.

It is not the last word on the question, and was evidently not intended to be. Many of the suggestions are clearly debatable, such, for example, as those restricting the freedom of trade by restricting it to very limited contracts between particular persons. If these suggestions were made more specific they might become less debatable, or more so. What we want to do here, however, is not to debate any of the questions, but to urge that the spirit of investigation shown by Mr. Jordan's article be extended to all branches of the cotton trade and to all interests affected. Now when the reform of cotton exchanges is in the air is the time for the cotton trade to investigate the question carefully in order that the reform may be complete when placed on the statute books and carried into effect. Here is an opportunity for the International Cotton Conference, whose permanent organization was endorsed at Atlanta, to do work for which it was designed. The completion of its organization awaits action by the various associations that were to form it. While

this delay cannot be avoided, it is well for all to recognize the need at this time for an active international organization representing all branches of the cotton trade to investigate the problem of reforming cotton exchanges. If a scientific and thorough investigation were made by such an association, representing the cotton planters and manufacturers, with every facility extended to the exchanges, traders and all others interested to aid in the investigation, the results would exert an influence that could not be resisted by the beneficiaries of existing abuses.

Cotton Planters and Manufacturers.

The present time marks a critical stage in the development of the plans outlined at Atlanta last October for the permanent organization of the International Cotton Conference. Those plans contemplate the formation of a separate association represented by an international committee of seven members appointed as follows:

Southern Cotton Association	1
Farmers' Union	1
Sea Island Cotton Association ..	1
English Federation	1
Continental Associations	1
American Cotton Mfrs. Asso. ...	1
National Asso. of Cotton Mfrs. ..	1
	7

The object of this international association was to enable all branches of the cotton industry throughout the world to co-operate in work for the common interests. Each association was to be left as free as at present to adopt and carry out the policies it might consider for the best interests of the particular branch of the trade it might represent. The new organization was intended to provide means for all to confer and work together for such objects as all could agree upon. The Atlanta Conference did all in its power to further this plan by registering its unanimous approval and referring the matter to the seven individual associations.

It is now five months since that was done and the near approach of the meetings of the respective associations arouses interest in the question of how the international plan is progressing. The subject has doubtless been considered carefully by the officers of each organization, and it would not be surprising if views should have been exchanged between those representing different organizations among the seven. It is extremely improbable that the members of any of the seven associations would at this stage adopt in regard to the supplementary international organization a course in conflict with the decision reached by the officials. For this reason the officials of these seven associations have now an exceptional opportunity to render a great service to the cotton trade.

Because of the importance of the interests affected, it may at this time be well to consider a possible obstacle to the immediate success of the international plan. It is disclosing no secret to state that from the inception of the idea of international organization in the cotton trade it has been the strong desire of the European cotton manufacturing associations to bring that result about by getting the associations of cotton manufacturers in the United States to join the European Federation. That desire and the European failure to recognize at once its complete hopelessness were natural. There are, however, many conditions, industrial, commercial, political, physical and fundamental, that make a union of American and European cotton associations on the lines of the European Cotton Federation impossible. These conditions have been stated repeatedly in public and in private to the representatives of the European cotton trade. A restatement of them, involving a discussion of conflicting and divergent interests would seem now to be unnecessary. Joining the European Federation would be suicide for any of the American cotton manufacturers' associations.

This carries no reflection on the European Federation. American planters and manufacturers recognize that all the objects of the Federation are important and legitimate. If American cotton manufacturers were to remove to Europe they would join the European Federation at once. Under present conditions, however, such union is

impossible. The time has arrived when the officials representing the European Federation should recognize this impossibility, spare their American friends the natural embarrassment of further restatement of reasons, and join in the only practicable plan for common action by the different branches of the world's cotton trade, the formation of a supplementary organization such as is contemplated by the Cotton Conference at Atlanta.

Such an association organized for free and friendly conference and action to further their common interests would extend beyond the scope of the associations comprising it, whose special privilege it would be to bear equally the comparatively small expense connected with the work. The plan, however, would bring together not only planters, spinners and manufacturers, but cotton ginners, the compressing interests, cotton exchanges, the trading community, the transportation companies, in fact all the interests involved in the production, transportation and exchange of cotton and cotton goods.

The Washington and Atlanta Conferences point the way, but the real work of the Conference can begin only after its permanent organization has been effected. The steps already taken are only preliminary. No actual progress has yet been made. The methods of baling American cotton and trading in cotton on the exchanges cannot be reformed by any number of pious resolutions. What is required to accomplish these and other things so sorely needed, such as a uniform and valid bill of lading, a better cotton contract and an improvement in the cotton supply, is thorough investigation of facts and common action by all branches of the world's cotton trade. Anything that ought to be done can be done by such united endeavor, for which the permanent organization of the International Cotton Conference was intended.

To conclude that such an organization will not sooner or later materialize implies a lack of faith in progress. The question of immediate interest, however, is whether any of the seven associations that endorsed the conference idea at Atlanta are to interpose obstructions to the permanent organization. We have referred to the difference of opinion that seems most likely to present such an obstruction. We are confident that the various American associations of cotton planters and manufacturers will not disagree with us. For that reason we appeal to the European Federation to avoid insistence on any procedure that would mean obstruction and delay.

Five months after the Atlanta Conference and October excursion through the cotton belt, the representatives of the European Federation, under the influence of home environments, conscious of the vast manufacturing interests represented by their influential organization, may harbor doubts as to the wisdom of forming still another cotton association on the form of the cotton conference. If such doubts have arisen we ask them to remember that the problems to be solved are world wide, involving many conflicting and divergent interests. We ask them to recall the remarkable representation of these interests at Atlanta. It is to be hoped that the officials of the European Federation will retain the spirit of that occasion. If, however, they should reach at Manchester a decision different from that recorded at Atlanta, then co-operation between the different branches of the cotton trade would be developed without them. Perhaps not so rapidly or efficiently as if backed by the organized influence of a manufacturing industry with 85,000,000 spindles, still it would be developed because co-operation is a necessity. Such co-operation can be reached within the United States. It might be aided by individual associations composing the European Federation, but we hope that Federation will make both of these courses unnecessary by carrying out the Atlanta resolution to its legitimate conclusion.

There are over 700 different industries in Marseilles, representing a total annual production of $200,141,000.

The value of the raw products imported into Germany from America amount to over 200 million dollars annually.

An Important Decision under the Graft Law.

Several years ago the legislatures of a number of manufacturing states, including New York and Massachusetts, enacted laws making it a criminal offence to give, offer or promise to an agent or employe any gift or gratuity without the knowledge and consent of his principal or employer, for the purpose of making sales or other contracts.

There have been a few convictions under this new law, but the most important case is one in which the Supreme Court, Appellate Division, in the State of New York, has recently handed down a decision.

The buyer for a large department store accepted a commission of 5 per cent. on sales of hosiery and other merchandise from a concern of whom his house was making purchases. His employers found it out and declined to pay for the goods, although they had kept them. The seller brought suit to collect. The City Court decided in the seller's favor and gave him the judgment, on the ground that although there had been fraud in the transaction, the goods had been delivered and accepted, and therefore should be paid for.

The department store appealed from this decision and carried the case up to the Supreme Court, whose decision just handed down reverses the judgment of the lower court, and takes the ground that in the case of a sale or agreement made where it is proved that bribes were given or taken without the knowledge of the purchaser the seller cannot invoke the aid of the law in enforcing such a contract.

The effect of this would seem to be most drastic, in so much as it permits the retention of the goods without payment, in such cases. The penalties under this ruling will be so great that few concerns will dare to take the risk involved in detection and conviction. It is certainly stern justice, but it seems to be justice for all its sternness. It implies that a person can no more establish title to property sold criminally than he can to property acquired criminally. The judges' opinion in this connection is well worth reading.

This decision should go far towards eliminating this demoralizing feature of business graft. We cannot make men honest by legislation, but by building a bulwark of stringent laws against dishonest practices it makes it harder and more dangerous to be dishonest, and emphasizes the maxim that "honesty is the best paying policy." With such a penalty as this staring them in the face few manufacturers or merchants would knowingly permit their salesmen or agents to negotiate transactions by methods exposing them to such losses.

The decision is of such importance that we print it substantially in full.

The action is brought to recover $1,555.81, being the purchase price of certain hosiery and wrappers sold and delivered by the plaintiff to the defendant. The defendant is a corporation conducting a department store in the city of New York, and the plaintiff is a manufacturer of or dealer in goods of the character described. The defendant, for a separate answer and defense, alleged in substance that the plaintiff, without its knowledge or consent, and pursuant to an unlawful, fraudulent and criminal design, and for the purpose of influencing the purchase of the goods by the defendant's purchasing agent, agreed to pay him a sum of money equal to five per cent. of the purchase price of the goods to be ordered by him; that the orders for these goods were obtained pursuant to such unlawful, fraudulent and criminal design and agreement; that after the goods were ordered and delivered, the plaintiff, pursuant to his agreement with the defendant's purchasing agent, paid the latter the sum of $75 without other consideration than placing the orders for the goods with the plaintiff, and that the ordering and delivery of the goods and the agreement and the arrangement to pay, and the payment, were part of the entire transaction which was against public policy, illegal void and contrary to the statutory law of the State of New York.

Upon the trial, the plaintiff proved that the orders for the goods were given by the defendant's purchasing agent, and the delivery of the goods to the defendant and non payment. The plaintiff then moved for judgment upon the evidence and on the pleadings, upon the ground that the affirmative defense was insufficient in law. Counsel for the defendant objected to the motion and asked leave to prove the facts alleged in the separate defence. The court thereupon directed a verdict in favor of the plaintiff for the purchase price of the goods together with interest thereon. The learned judge who presided in the City Court wrote an elaborate and instructive opinion in support of his decision, upon the theory that, while the agreement on the part of the plaintiff to pay the agent of the defendant was void as against public policy, yet inasmuch as the goods had been delivered, the defendant would not be permitted to retain the goods and decline to pay therefor. The learned Appellate Court supplemented this

opinion with their views at length, to the same effect.

I am of the opinion that the judgment is wrong and should be reversed. It must be assumed that the defendant might have proved upon the separate defence set up in its answer, that the corrupt offer and agreement on the part of the plaintiff to pay the defendant's agent five per cent. on the orders received was the inducing cause for placing the orders with the plaintiff, and that the agreement on the part of the latter so to place the orders constituted one transaction. If so, the Court should not be astute to discover a theory upon which they might be separated, and they should be deemed inseparable. In any view, it would seem that the defendant might have shown that the offer of agreement to pay the bribe was made and accepted as a consideration for the giving by the defendant's purchasing agent, then or subsequently, the orders for the goods. That the bribe was conditioned upon plaintiff's giving the contract is demonstrated by his agreement to pay a percentage of the selling price of the goods, according to the orders received. It should be regarded, therefore, practically as if the agreement had expressly provided that the purchasing agent of the defendant should receive a specified percentage of the moneys actually received by the plaintiff on orders so placed with him; thus, in effect, forming but one contract with these parties, and a different consideration running to the agent from that running to his principal. It must be assumed, therefore, that each order for goods given by the agent was given pursuant to one general corrupt agreement, embracing all orders to be given, or pursuant to separate corrupt agreements with respect to each. The corrupt practice of secretly offering bribes to servants, agents and employes, to induce them to place contracts for their masters or employers, had spread to such an alarming extent in this State that its viciousness and dishonesty and demoralizing tendencies attracted the attention of the Legislature at its session in 1905 and led it to declare it to be a misdemeanor to give or receive such a bribe, by enacting Section 384-r of the Penal Code, which provides as follows:

"Corrupt influencing of agents, employes or servants. Whoever gives, offers or promises to an agent, employe or servant, any gift or gratuity whatever, without the knowledge and consent of the principal, employer or master of such agent, employe or servant, with intent to influence his action in relation to his principal's, employer's or master's business; or an agent, employe or servant who, without the knowledge and consent of his principal, employer or master, requests or accepts a gift or gratuity or a promise to make a gift or to do an act beneficial to himself, under an agreement or with an understanding that he shall act in any particular manner to his principal's, employer's or master's business, or an agent, employe or servant, who, being authorized to procure materials, supplies or other articles either by purchase or contract for his principal, employer, or master, or to employ service or labor for his principal, employer or master, receives directly or indirectly for himself or for another, a commission, discount or bonus from the person who makes such sale or contract, or furnishes such materials, supplies or other articles, or from a person who renders such service or labor; and any person who gives or offers such an agent, employe or servant such commission, discount or bonus shall be guilty of a misdemeanor and shall be punished by a fine of not less than five hundred dollars, or by such fine and by imprisonment for not more than one year."

There can be no doubt that the act of the plaintiff in bribing the purchasing agent of the defendant was a violation of this section of the Penal Code. The plaintiff, therefore, in obtaining the contract upon which he bases this action, committed a crime, and, as already observed, whether the purchasing agent of the defendant agreed to place the orders at the same time the plaintiff agreed to give him the bribe, or whether the orders were given subsequently, but based upon the plaintiff's unlawful contract to bribe the agent, is immaterial. The Legislature has not expressly declared either that the contract to pay the bribe or the contract induced by the bribe is void or unenforcible. A contract, however, made in violation of a penal statute, although not expressly prohibited or declared to be void, is prohibited, void and unenforcible, whether executory or executed. . . . A contract to do an illegal act or to aid another in violating the law is likewise void and unenforcible, whether executory or executed. . . . Upon the same principle, one who is required by law to procure a license to conduct any trade, calling or profession, may not recover for services rendered or property sold, without first obtaining such license, regardless of whether or not it was known by the person for whom the services were rendered or to whom the property was sold that the license had not been obtained. It is, therefore, quite clear that the purchasing agent could not enforce the contract to recover the consideration agreed to be paid to him; and it may be here observed that this would have been so under the common law, if the statute had not been enacted, for the contract contravened public policy. The question appears to be presented now for the first time as to whether this is the limitation of the disability for violating the penal statute, or whether the court may refuse its aid to the party obtaining the contract for the purchase or sale of property, or for work, in violation of the statute, upon the same ground that it leaves the party to a contract which is void as against public policy, or offends against good morals, where it finds him. It is manifest that the Legislature in enacting this penal statute intended to emphasize and extend the public policy of the common law, which rendered such contracts by agents for their own benefit void. It being the province of the Legislature to declare the public policy of this State, it is the duty of the Court to be guided thereby in administering the law. The acts of the plaintiff not only offended against good morals and public policy at common law, but constituted a crime under the statutory law of this State, and he is here seeking the aid of the Court to enforce a contract which he procured by violating our penal statute. Nothing could be more

corrupting, nor have a greater tendency to lead to disloyalty and dishonesty on the part of servants, agents and employes and to a betrayal of the confidence and trust reposed in them, than these practices which the Legislature has endeavored to stamp out; and I think nothing will be more effective in stopping the growth and spread of this corrupting and now criminal custom than a decision that the courts will refuse their aid to a guilty vendor or vendee, or to anyone who has obtained a contract by secretly bribing the servant, agent or employe of another to purchase or sell property or to place the contract with him. If the Court should lend its aid to the enforcement of this contract, induced by a five per cent. bribe of the purchase price of the goods, then tomorrow it would be called upon to enforce a contract induced by a bribe of twenty-five per cent, or even fifty per cent. of the purchase price, and it would thereby be indirectly compelling a master or employer to reimburse a party for moneys expended in bribing his servant, agent or employe, in violation of the law. Of course, a contract by which the price is increased to enable the vendor to pay the agent could not be enforced as to such increase, but a decision stopping there would be of little aid in remedying the evil. If the servant could not make a contract obligating his master to pay a certain percentage of the purchase or selling price of goods to himself, why should the criminal vendor or vendee be permitted to enforce a contract secretly made, practically in part for the benefit of the servant, agent or employe, whom he has unlawfully corrupted? How can or why should the contract be divided and the guilty vendor or vendee be permitted to recover the part of the selling or purchase price which was to be received for himself over and above the amount he was to pay the agent? It would require a consideration of the unlawful agreement to determine the amount each is to receive; and that is fatal, for it is one test to determine whether courts will enforce a contract (Leonard v. Poole, 114 N. Y. 31).

The learned counsel for the plaintiff contends that it does not appear that the contract price is more than the fair market value of the property. It would seem, on the facts, that it is five per cent. more than the plaintiff desired for his property; and if these practices are allowed, the tendency will be not only to keep prices up, but to raise them, and the nominal price, if the custom should become general, would not represent the selling price of property. Public policy requires that an agent, servant or employe shall perform the duties of his employment involving discretion and trust, with a single purpose of serving his master or employer; and the master or employer, for the salary or compensation which he has agreed to pay, has a right to expect honest, faithful, loyal service, rendered with a sole regard to his interests. The tendency of this practice is to make the servant disloyal and to have his action not only influenced but controlled by his personal interests, rather than by the duties of his employment. The temptation will be either to agree for his master or employer to pay more than the fair market price of property purchased, or fair market value of work to be performed, or to accept property or work of an inferior quality or grade, in order that he may receive for himself a large percentage. The servant would be accountable to his master or employer for any moneys thus received, but that affords no adequate remedy, for the reason that such contracts are made secretly and it would be difficult to discover or prove the facts. The vice lies in making the agreement without the knowledge of the master. Of course it is perfectly competent for a master to employ a servant as a purchasing or selling agent and to give him a commission upon the purchase price or allow a commission to be paid by the vendee upon the selling price, and it may well be, as was recently held in Ballin v. 14th Street Store (54 Misc. 359, Aff'd App. Div. , 2d Dept.), that where the bribe is received with the knowledge of the master, the statute does not apply and the contract of sale will be enforced. It is perfectly plain that if the contract had not been performed by the plaintiff, the defendant, upon discovering the fact that its agent had been bribed to place the contract, would have had the right to rescind (Smith v. Seattle L. S. W. Ry. Co., 72 Hun. 202). It is contended that its only remedies upon discovering the facts were to rescind the contract or, if that were impracticable, to counterclaim for any damages it has sustained by reason of the plaintiff's fraud in inducing the contract, it is deemed to have ratified and affirmed the contract. I am of opinion that this is not a case in which the rule of ratification applicable to ordinary contracts induced by fraud, should be applied. The public policy of our State forbid the ratification, as well as the making of such a contract. Usually private contracts concern only the parties thereto, and it is optional with a person who has discovered that he has been defrauded, whether to ratify the contract or to rescind it. There is ordinarily, at least, no general public policy involved in such cases. . . . I am, therefore, of opinion that the defendant should have been permitted to prove the facts pleaded as a separate defence, and that if they be established, the plaintiff will then be shown to have committed a crime in obtaining the very contracts which he asks the aid of the court to enforce, and should be denied assistance.

Practically all the jute exported from India passes through the port of Calcutta. During the calendar year 1906 the value of the jute and jute manufactures sent to the United States from this port was $30,709,426.

There are only 31 flour mills in Greece and with the exception of four all use the old-fashioned mill stones for grinding.

The amount of silk conditioned at the Conditioning House of Lyon in 1906 was 15,810,871 pounds, an increase of 356,510 pounds over 1905. The entire world's production of silk is estimated by the Silk Association of Lyon to be 45,194,300 pounds.

Dress Goods Made by Cheap Labor and Dumped on the American Market.

An American Consul Reports to the State Department at the Request of the Textile World Record.

When the German agreement went into effect last July we gave our opinion of it in a letter to S. N. D. North, the chairman of the commission that negotiated the arrangement at Berlin. It was not enough, however, to point out the folly of a general tariff reduction, direct or indirect; to protest against the secrecy with which the agreement was made by the Washington authorities; to show that Germany could not wage a successful tariff war with the United States; to publish the fact that mill operatives were working in Germany for 43 cents a day; to reveal the wretched living conditions to which such wages reduced the German workers; to measure the vast quantity of textile products made under these conditions and exported to the United States in spite of the Dingley tariff; to let Mr. North's words when he was helping to make and perfect the Administrative Act refute the sophistry with which he sought to defend a trade agreement that weakened the same Act; to point out the inflexible policy of national selfishness that Germany follows through the centuries and in which the signing of this trade agreement with the United States was but an incident.

FACTS WANTED.

It was well that all these things were made known, but they were not enough. When a readjustment of trade relations between a population of 90,000,000 on one hand and of 60,000,000 on the other is to be made, the first requisite is facts, facts that go to the root of the industrial and commercial conditions in the two countries. This we fully realized when the new German tariff with its threat of a tariff war went into effect in March, 1906. When in the fall of that year a commission was sent from Washington to Berlin to negotiate a trade agreement with Germany we recognized that the facts the American representatives needed in order to protect American interests were to be determined not among the bowing and smiling diplomats at Berlin, but among the weary, toil-stained factory workers of Greiz, Gera, Chemnitz and Reichenbach. We knew the German representatives would not disclose these facts. We feared the American representatives did not possess them, and so we thought we would try to discover them ourselves.

STARTING THE ENQUIRY.

After considering various means for accomplishing our object we decided to send a request through the Bureau of Manufactures to the State Department that all the American consuls in German textile districts be called upon for a report on conditions of manufacturing in German mills, showing not only the standard of living and of daily or weekly wages, but the cost of production per unit of weight or measure in the various departments of the mill. Accordingly on May 23, 1907, while the terms of the German agreement were still a secret—in the United States—nine days before the pact was announced by proclamation of the President, we addressed the following letter to the Chief of the Bureau of Manufactures:

Boston, Mass., May 23, 1907.

Col. J. M. Carson,
Chief, Bureau of Manufactures,
Washington, D. C.

Dear Sir:—The industrial conditions in foreign countries form a subject of special interest to American manufacturers by reason of the competition of foreign products in both foreign and domestic markets. I would therefore suggest that you ask the American consuls in the principal manufacturing countries to investigate and report on the conditions in their respective districts. To avoid the mistake of asking for too much information from the various consuls I would suggest that the request be at first confined to textile products and that special attention be given to Germany by reason of the consideration now being given our commercial relations with that country.

which in the year ending June 30, 1906, exported manufactured textiles to the United States to the value of $30,446,397, classified as follows:

Cotton	Manufactures	$16,459,615
Silk	"	6,103,545
Wool	"	4,895,255
Fiber	"	2,987,982

The following information would be of special value to American manufacturers in enabling them to decide as to the reason why German textile manufacturers can compete in this market despite the present tariff:

1. Wages paid to overseers and operatives in the different departments of the mill.
2. Hours of labor.
3. Class of machinery, giving makers' names.
4. Class of goods, giving samples.
5. Speed of machinery.
6. Number of machines tended by each operative, or number of operatives to a machine.
7. Cost and style of living.

General statistics of the country or district and statements of opinions should be excluded from the reports, which should be confined strictly to information obtained either by personal observation or inquiries among the mill operatives and other experts.

The value of such reports would be greatly enhanced by photographs of the operatives and their homes, by specimens of pay envelopes showing wages received in typical cases, by interviews with representative mill workers, and by samples representing the finished products of the respective mills. These samples are indispensable to a perfect understanding of even the best of written reports on this question.

The consuls should try to put themselves in the place of the American manufacturer who knows very little about conditions in foreign mills, and then seek the information that he thinks is needed. These reports should be practical, accurate and of living interest. When giving statements of wages by piece price lists care should be taken to give full details, that our manufacturers may know just what work is referred to. Thus in giving prices for weaving per yard, either a sample of the goods should be sent, or full details regarding picks per inch should be furnished.

If properly compiled they would be of great value at this time when industrial conditions at home and trade relations with foreign countries are in a process of general readjustment. It is a great opportunity for our consuls to distinguish themselves, as to do the work right will necessitate energy, ability, and intelligent consideration of many details of industry and commerce, and will attract general attention from the American public.

Yours very truly,

Samuel S. Dale, Editor.

Col. Carson, the chief of the Bureau, recognized at once the value of the desired information to American manufacturers, and as a result the letters calling on our consuls for reports were sent out. That was nearly a year ago. It is only within the past few weeks that replies have been received by us. The delay was not unexpected. The figures we asked for are about as accessible as the state secrets of the Wilhelmstrasse. And naturally so. A manufacturer whether in or out of Germany guards most jealously the record of his cost of production. To reveal it is to expose his strength or weakness to the enemy, his competitors. We knew all this a year ago, as we know it now, but relied on the doctrine of chances with ninety-one more or less active American consuls in contact with the complicated business and social relations of 60,000,000 more or less secretive Germans.

ONE CONSUL'S SUCCESS.

One consul at least has succeeded. His report, which has been forwarded to us, gives the information we desired. With it were sent forty-four samples of worsted and worsted and silk dress goods, to each of which was attached a card stating the following particulars:

Place of origin.
Width.
Weight.
Size of yarn.
Selling price (for export).
Cost of yarn.
Cost of weaving.
Cost of dyeing and finishing.
Cost of general expenses.

These particulars for the forty-four samples are given in the accompanying table. We have subjected the report to every available test, with the invariable result of confirming its accuracy and reliability. We analyzed five of the samples taken at random from the forty-four, and obtained the following results:

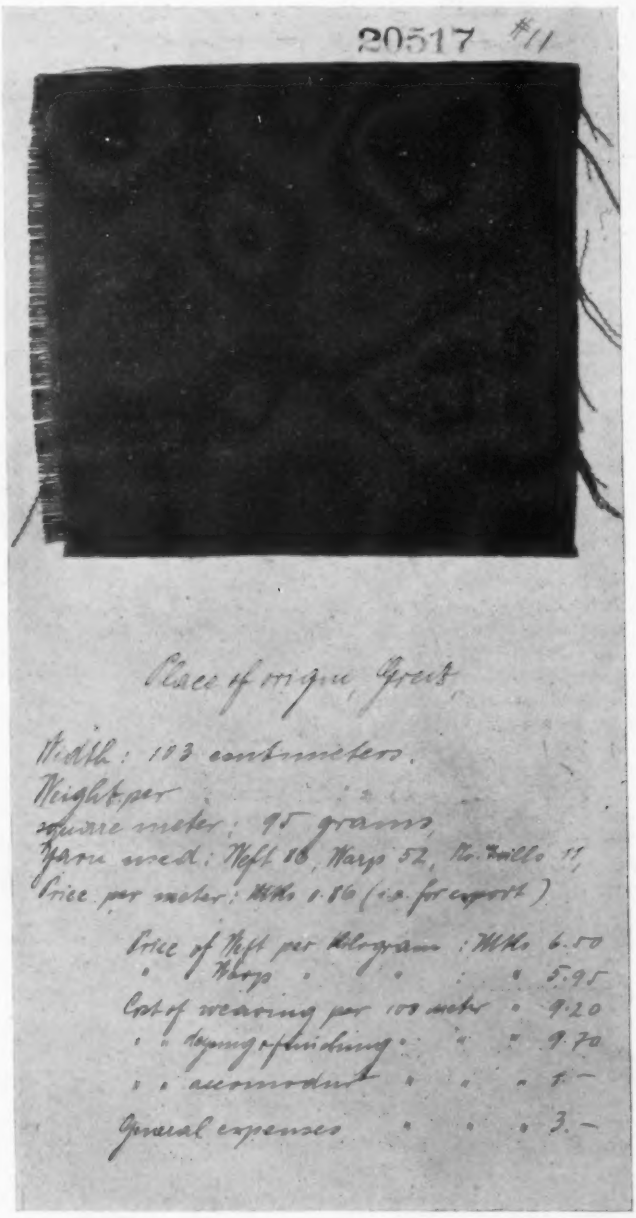
	Warp.	Filling.	Weight per yd.
No. 1	48 E 1/26 wors.	46 P 1/24 wors.	4½ ozs. 42½"
2	34 " 2/45 "	30 " 2/43 "	4.2 " 50"
4	81 " 2/58 "	81 " 1/45 "	5.6 " 43"
7	87 " 1/42 "	53 " 1/19 "	7.2 " 51"
8	80 " 2/116 silk	162 " 1/70 "	4. " 42½'

Allowing for the difference between the English and metric standards and for the changes in the yarn between the spun yarn and the finished cloth, the actual sizes and

Details of forty-four (44) samples of German Dress Goods from Greiz, Reichenbach, Neumark and Netzschkau.

No	Width cm.	Weight in grams	Export Price	Warp met. No.	Price	Filling met. No.	Price	Cost per 100 m. Weav.	Bur.	Fin.	ace	Gen.	Place of Origin
1	110	140	M 1.32	24	M 5.80	28	M 5.65	M 5.55		M 6.	M 2.	4%	Greiz
2	128	106	1.64	2/44	7.85	2/44	7.85	9.35		16.40	1.20	M 4.65	"
3	110	125	1.60	2/44-43	7.90 6.75	49	6.95	11.75		16.85	2.	4%	"
4	110	155	1.63	2/72	8.55	53	7.15	9.40		6.	1.50	3%	"
5	108	84	2.	52 1703	6.70 42.	52 1705	5.70 42.	15.		16.80	1.	M 9.	"
6	108	57	2.	1/2/28 1053	11. 23.	1/2/100 1053	11. 23.	15.		11.20	1.	8.	"
7	130	184	2.25	52	5.85	22	4.	6.90		26.95	1.	3%	Reich.
8	108	109	1.51	2/16 2m 2005	15.	79	6.90	13.60		18.40	1.	M 4.	Greiz
9	108	128	1.38	42	6.65	48	6.40	9.90		15.10	1.20	3.70	"
10	108	140	1.47	52 24/4	5.95	96	7.	20.50		14.60	1.	4.	"
11	103	95	.86	52 24/4	5.95	86	6.50	9.20		9.70	1.	3.	"
12	124	110	.70	26	2.16	70	6.45	6.80		.30	.90	2.70	"
13	108	75	.96	44	7.60	46	7.60	11.		10.25	1.20	2.65	"
14	110	104	1.72	2/96	9.70	96	9.	12.80		16.75	2.	4%	"
15	140	136	1.75	2/80	7.65	53	7.15	9.20		7.50	1.50	M 3.	"
16	110	126	1.25	2/72	8.55	42	6.20	7.50		6.	1.50	3%	"
17	105	131	1.23	42	7.10	53	7.15	7.20		6.	1.50	3%	"
18	108	151	1.67	42	6.90	48	6.40	14.85		17.	1.20	M 4.35	"
19	110	134	1.48	2/80	7.65	53	6.15	7.80		18.80	1.50	3%	"
20	108	127	1.62	2/40	8.30	2/40	8.30	8.		15.40	1.20	M 4.55	"
21	125	200	2.06	43	6.60	18½	4.20	9.30		25.	1.50	3%	"
22	140	166	1.93	37	7.	37	6.15	12.		8.50	1.50	3%	"
23	105	102	.94	37	7.	37	6.15	5.70		6.	1.50	3%	"
24	108	115	1.24	56 24/4	5.90	96	7.20	16.20		11.90	1.	2%	"
25	110	121	1.23	42	7.10	53	7.15	10.		6.	1.50	3%	"
26	108	82	1.30	52	6.70	52	6.70	15.		8.70	1.	M 5.	"
27	110	132	1.35	42	7.10	53	7.15	12.		6.	1.50	3%	"
28	115	134	1.52	2/80	7.65	53	6.15	8.10		17.20	1.50	3%	"
29	128	170	1.90	49	6.60	22	4.60	9.50		20.50	1.	M 7.	"
30	104	107	1.50	2/40	6.90 19.50	46	7.60	11.10		14.85	1.20	4.45	"
32	138	84	1.49	2/70	8.20	2/70	8.20	10.10		13.75	1.20	4.20	"
33	130	185	2.25	52	7.60	22	4.	6.90		36.95	1.	3%	Reich.
34	130	173	2.07	52	5.85	25	3.95	6.90		36.20	1.	3%	"
35	130	180	2.07	52	5.85	25	3.95	6.90		36.20	1.	3%	"
36	130	194	2.55	46	5.70	25	3.95	5.80		42.30	1.	3%	"
37	130	180	2.25	52 6	5.85 2.80	22	4.	6.90		36.95	1.	3%	"
38	130	183	2.15	46	6.35	18	2.05	23.90		42.50	5.	M 6.45	"
39	130	183	2.07	52	5.85	25	3.95	6.90		36.20	1.	3%	"
40	130	186	2.27	52	5.85	25	3.95	6.90		37.05	1.	3%	"
41	130	165	2.65	42	6.	17	4.	15.40		43.	1.50	3%	Neumark
42	130	185	2.43	42	6.	22	4.55	15.60		47	1.50	3%	"
43	130	190	2.42	42	6.	17	4.	15.45		47	1.50	3%	"
44	130	200	2.45	42	6.30	22	4.40	9.		43	2.	M 11.	Netzs.

weights are found to correspond closely with the consul's memoranda.


20517 #11
Piece of origin, Greece
Width: 103 centimeters.
Weight per
square meter: 95 grams
Yarn used: Weft 16, Warp 52, No. Twills 11
Price per meter: Mks 1.86 (i.e. for export)
Price of Weft per kilogram: Mks 6.50
" Warp " " " 5.95
Cost of weaving per 100 meter " 9.20
" " dyeing & finishing " " 9.70
" " assortment " " " 1.—
General expenses " " " 3.—

A WORSTED SERGE MADE BY CHEAP GERMAN LABOR AND DUMPED INTO THE UNITED STATES AT 10 PER CENT LESS THAN THE GERMAN COST.

Moreover the samples bear the marks of having come direct from the mill. The headings are in some of them; others show the perforations made by the mill sewing machine. The samples and the technical data all testify to the accuracy of the report.

COST IN GERMANY AND THE UNITED STATES.

As soon as the samples and report arrived we submitted them to several leading American manufacturers of this class of goods with a request for a statement of corresponding details in American mills. The desired information was obtained with more or less difficulty and subjected to tests that place its reliability beyond question. As a result we are now able to present comparative statistics of cost per unit of weight or measure in German and American worsted dress goods weaving mills.

While these goods vary widely in construction they are of one general class, and, since it is impossible to compare the cost for all, we will take a few typical samples. The cost of dyeing and finishing covers not only the cost of labor but of dyestuffs, soap, etc. It is the cost of weaving that affords the best basis for comparing the cost of production in the two countries. Sample No. 2 is a voile, made at Greiz. Here is a brief but suggestive exhibit of the cost of weaving 100 yards of this fabric:

Germany	$2.10
United States	3.50
Difference, 66 2/3 per cent.,	$1.40

The yarn costs the German mill 89 cents a pound; it could not be bought in the United States for less than $1.25 a pound, which is 40 per cent. higher. The cost of weaving this cloth in the United States is 66 2/3 per cent. higher than at Greiz. Why? Because the weekly wages are higher in the United States.

THE LOOMS USED IN GERMANY.

These goods are made on power looms in both countries. We present here illustrations sent by the consular report and showing the class of weaving machinery on which the German goods are made. Our readers will recognize at a glance that the looms are thoroughly modern, can be run as fast as American looms, and consequently produce cloth with practically as great an economy of labor. That being the case the cost of weaving per yard must be in proportion to the wages in the two countries. Here is the consul's statement of wages and living conditions in the Greiz, Reichenbach, Neumark and Netzschkau districts:

The average wages paid to overseers range from 24 to 40 marks ($5.71 to $9.52) a week, only in rare instances higher than this. The wages paid to operatives, on an average, are nearly 16 marks ($3.81) a week. This latter rate was established the beginning of last year when the average weekly payment was 13.99 marks ($3.33). The employers say that a number of the workmen do not earn the pay they receive in relation to the work done. Operatives are striving to have a minimum of 18 marks a week established. This is being strongly opposed by most manufacturers. Before the latest increase in wages was granted, the operatives, both sexes, divided into four classes, earned as follows:

Up to 16 years of age	$2.47 per week.
From 16 to 21 years	3.08 per week.
From 22 to 55 years	3.83 per week.
Over 55 years	3.18 per week.

There are, of course, exceptions in different places, and one finds wages in some cases as high as 18 marks ($4.28) a week being paid, which counterbalance some wages as low as 7 marks ($1.67) a week.

The families of the working people are rarely small, and it is not infrequent to find a man and his wife and several children subsisting on 16 marks ($3.81) a week. From this amount rent, clothing, food, fuel and other necessaries have to be paid. In many instances, however, the wife is also a wage earner as well as the man, and the children go to work as soon as possible. Such families usually live in a kitchen and one other room. There the family cooks, eats and sleeps.

The consul adds that the working time in the German mills is from 7 a. m. to 7 p. m. in summer and from 7.30 a. m. to 7.30 p. m. in winter, the time allowed for rest bringing the actual working time to about 10 1/2 hours per day, or 63 hours a week.

GERMAN AND AMERICAN WAGES.

Weavers on this class of dress goods in the United States cannot be hired for less than $10.00 a week of 58 to 60 hours. Many of them earn more. In other words, wages in American mills are more than double the wages paid in the Greiz and Reichenbach districts. The cost per yard of cloth is higher in the United States because weekly wages are higher. And this undoubtedly holds good for all departments of the mill, wool sorting, scouring, carding, drawing, spinning, dressing, dyeing and finishing.

The next sample, No. 8, made at Greiz, is a silk warp henrietta. The silk warp yarn

costs $1.70 a pound in Germany; $3.00 a pound in the United States. The worsted filling yarn costs 78 cents a pound in Germany; $1.40 a pound in the United States. The comparative cost of weaving 100 yards in the two countries is as follows:

In Germany	$3.10
In the United States	8.00
Difference, 158 per cent.	$4.90

These two samples, showing the greater cost in the United States because of higher wages, are typical of the forty-four received.

In the course of our investigation of the cost of weaving this class of goods in the United States, the treasurer of one of the leading dress goods mills of the country gave us the piece work prices paid for weaving five of the forty-four samples, in his mills. This enables us to present the following striking comparison between the wages paid the weaver alone in this American mill and the total cost of weaving the same goods in Germany, which cost includes not only the weaver's wage, but the wages of overseers, loom fixers, chain builders, drawers-in, yarn carriers and other weave room help. The figures are for 100 yards in each case.

Sample	Total Cost of Weaving in Germany.	Weavers wages only in the United States.
No. 3	$2.69	$5.55
No. 7	1.57	4.50
No. 37	1.57	4.50
No. 42	3.58	5.46
No. 44	2.06	6.00
Average	$2.29	$5.20

That is, the wages paid the weaver alone for weaving 100 yards in the United States would pay the weaver's wages and all the fixed charges of the weave room for 227 yards in German mills.

THE CHEAP PRODUCTS OF CHEAP LABOR.

The effect of these labor conditions on selling prices in the two countries is illustrated by a worsted serge, No. 9, made as follows: Weight, 4.3 ounces per yard 42 1/2 inches. Warp, 1/38 worsted. Filling, 1/43 worsted. The selling price of this cloth in Germany is 31 cents a yard. We are informed by experienced men in the American trade that 75 cents a yard would be a fair price in this country without affording the manufacturer more than a reasonable profit.

THE NEED OF PROTECTION AGAINST CHEAP FOREIGN LABOR.

What the figures so far given show, namely, the increased cost per yard due to the higher wages in America, is what anyone at all familiar with the textile industry expected. We have obtained and present the data here, not to convince the textile trade, but to meet the attack on protection to American labor. They are exposed to the scrutiny of any and everyone, with confidence that they will not only stand the closest analysis, but will serve as conclusive proof of the necessity of maintaining the policy of protection to the American operative against competition with his poorly paid German competitor.

PRODUCTS OF CHEAP LABOR DUMPED HERE AT LESS THAN COST.

We come now to the most significant feature of the consul's report. The selling price is given for each of the forty-four samples, and in every case is accompanied by this explanatory memorandum: "i. e., for export." This is shown by the accompanying illustrations of two of the sample cards, Nos. 11 and 15. Let us compare the German cost with this "price for export:"

No. 11. Cost per Meter.

Yarn	M	.716
Weaving	M	.092
Dyeing and finishing	M	.097
Accomodur	M	.01
General	M	.03
Total	M	.945

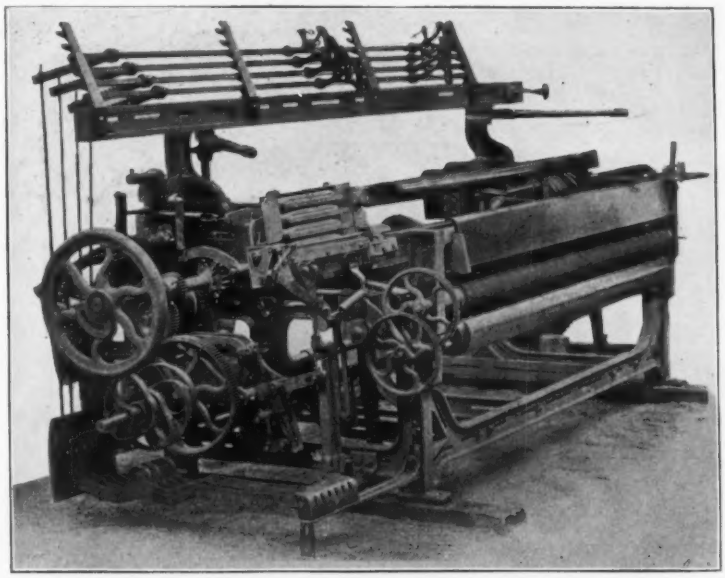
No. 15. Cost per Meter.

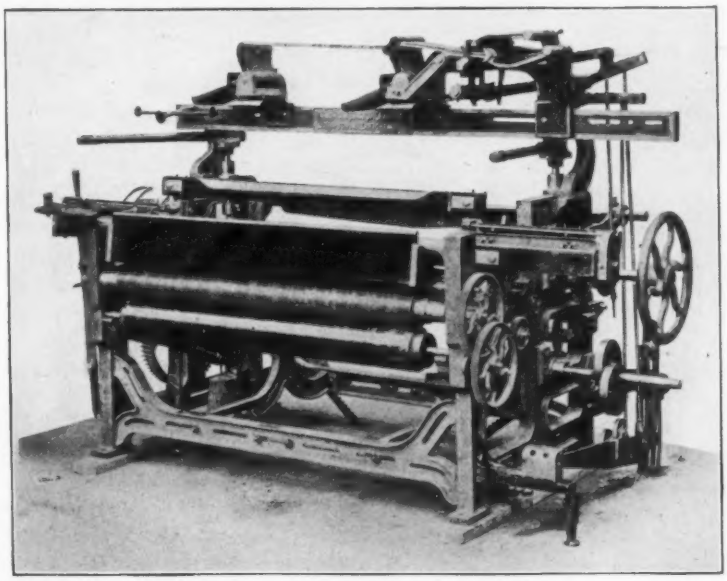
Yarn	M	1.66
Weaving	M	.092
Dyeing and finishing	M	.075
Accomodur	M	.015
General	M	.03
Total	M	1.872

One fabric, No. 11, costs the German man-

ufacturer .945 mark per meter, and is invoiced "for export" to the American market at .86 mark or 10 per cent. less than cost.

These two samples show the way in which the products of cheap German labor are dumped on the American market either at



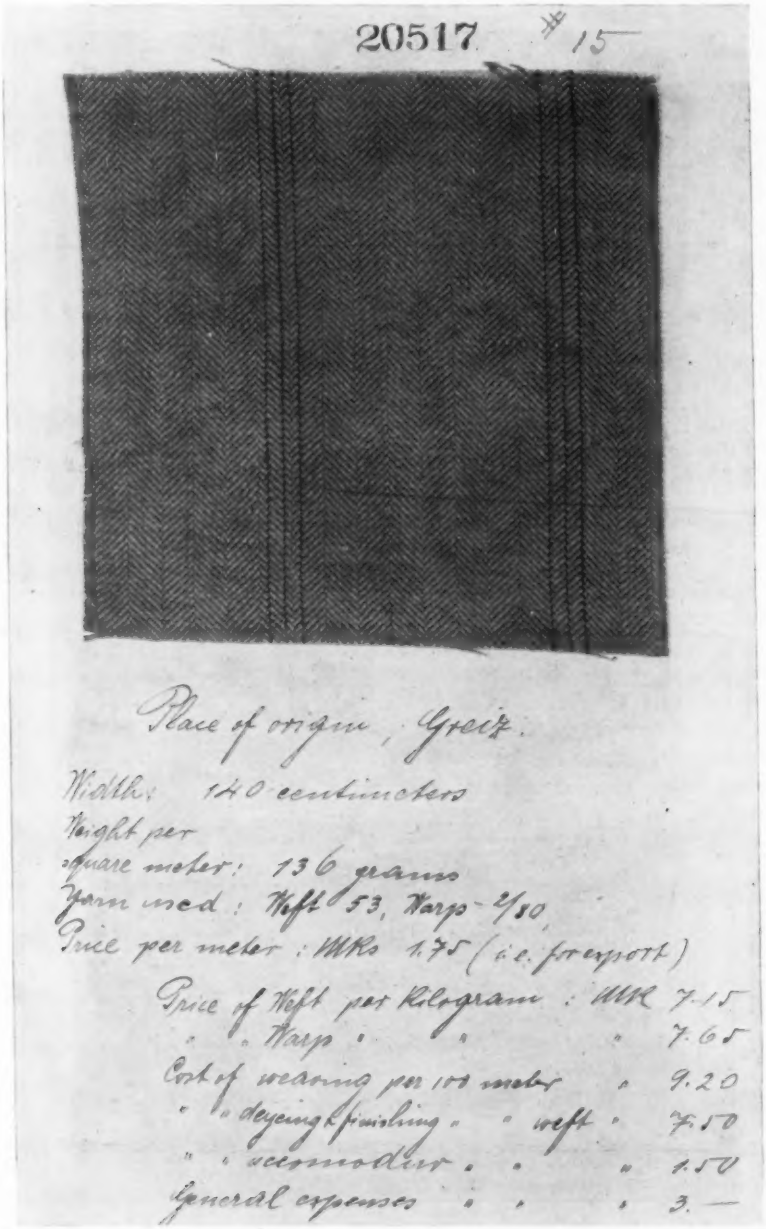


MODERN FAST RUNNING GERMAN LOOMS OPERATED BY WEAVERS EARNING $3.81 A WEEK.

The other, No. 15, costs 1.872 marks and is invoiced "for export" to the United States at 1.75 marks or 7 per cent. less than the low cost in Germany.

undervaluations or cut prices and brought into competition with the products of high priced American labor,—methods of doing business that the trade agreement between

Germany and the United States is designed to facilitate.


20517 # 15
Place of origin, Greiz.
Width: 140 centimeters
Weight per
square meter: 136 grams
Yarn used: Weft 53, Warp 2/80
Price per meter: Mks 1.75 (c.i.f. for export)
Price of Weft per Kilogram: Mk 7.15
" " Warp " " " 7.65
Cost of weaving per 100 meter " 9.20
" " dyeing & finishing " " weft " 7.50
" " accessories " " " 1.50
General expenses " " " 3.—

A FANCY WORSTED DRESS CLOTH MADE BY CHEAP GERMAN LABOR AND DUMPED INTO THE UNITED STATES AT 7% PER CENT. LESS THAN THE GERMAN COST.

GERMAN SECRECY.

Protectionists are under obligations to the consul who made this investigation, for his success in securing the information regarding the German textile industry. The following passage from his report shows what we can all readily understand, that he had no easy task:

It is probably known to American textile manufacturers that the weaving mills in this district are practically closed to expert inspection except to the Government. While showing every courtesy to inquirers, a divulgence of information which may or may not be secret is in many instances withheld. This policy is followed to avoid giving any possible aid to competitors.

The report gives much interesting information which we have omitted here because of our desire to concentrate attention on its chief features: first, the evidence that German cloth is cheap because German labor is cheap; and second, the evidence that these German goods cheapened by squeezing labor to the verge of starvation are dumped on the American market at less than the German cost.

END THE GERMAN AGREEMENT AT ONCE.

With the business depression prevailing at present and with a considerable number of people in want of employment the facts disclosed by this report emphasize still further what has long been so evident that it would glimmer through a blind man's eye. The German trade agreement that went into effect last July should be terminated at once.

Cotton Bills of Lading.

A conference of business men at Liverpool last July has already resulted in what promises to be the reform of one abuse in the cotton trade by which bills of lading were forwarded and payment made by the foreign buyers while the cotton represented by the bills might be lying at some interior point awaiting shipment by rail. The Liverpool conference was made up of representatives of the banking, shipping, trading and manufacturing interests, who assembled quietly, discussed their difficulties, decided on a course of action and then appointed a committee to carry their plans into effect. There was neither hurrah, nor excitement, but the following circular letter recently issued by the chairman of the committee shows that important results have been obtained:

Thanks to the energetic support of the Liverpool and Manchester bankers, the committee has every reason to be gratified with the success achieved so far. Practically all the Savannah shipowners and agents have come in, and in Galveston only a few names are still left out. New Orleans shipowners and agents have so far not been approached by the committee, because consignees of goods via that port are protected by the law of Louisiana, as will be seen by the following extract of a letter from the president of the New Orleans Cotton Exchange to the president of the Liverpool Cotton Association, under date of 7th January, 1908:—

"The complaint of the bankers is directed towards the dangerous practice prevailing at other Ports, of issuing a Port Bill of Lading, against Cotton in the Interior. This practice is not permitted by the laws of this State, and does not prevail at this port. Foreign shipments from the interior are covered by through bills of lading issued by the railroad company, and the liability of the latter does not cease until the consignment is delivered to the ship. Upon the actual delivery of the consignment to the ship, the latter issues a master's receipt which is attached to the through bill, and is evidence that the ship has actually received the cotton. No port bill of lading is issued here unless the cotton is actually in port, and delivered to the vessel."

So much for the present state of affairs.

With regard to the future the committee has repeatedly been asked what steps it proposes to take to keep the reform effective. The answer to to this has to deal with two points, viz:—

1. The alleged danger of any one of the consenting parties breaking faith with the committee. This danger is only imaginary, for recent experience has taught us that competitors would immediately inform the committee of such a breach of agreement, and to the defaulter the consequences would be disastrous.

2. Keeping the list complete. Changes and amalgamations take place and new firms are founded, and alterations and additions in the list will therefore be continually necessary. To overcome this difficulty the Liverpool clearing bankers have, at the committee's request, passed the following resolution:—

"While adhering to previous resolutions the members of the Association of Liverpool Clearing Bankers, at the request of the committee of the bill of lading conference, 1907, resolve that they will only accept or make advances against cotton bills of lading issued by shipowners or agents who have consented or may in future consent to the conference resolutions."

This resolution will make it incumbent upon the individual shipowners and agents engaged in the cotton trade to take the necessary steps to have their names entered on the official list of consenting shipowners and agents, by writing to the chairman of the bill of lading conference committee, Cotton Exchange, Liverpool, that they consent to issue only cotton bills of lading in conformity with the conference, 1907, terms, viz:—

"A through bill of lading so drawn as to establish the continuity of responsibility of the several carriers from the interior point to the ultimate European or other foreign destination—or

"A port bill of lading duly signed on behalf of the steamer by the captain or other authorized agent after receipt of the goods into the custody of such captain or other authorized agent at the port of shipment."

It is necessary that this resolution of bankers receives the widest possible publicity, and for that purpose—

1. The different cotton exchanges and other bodies represented at the conference are asked to distribute copies of this circular to their members, and to other interested parties.

2. Messrs. Frederick Leyland & Co. have kindly undertaken to distribute copies to shipowners and agents through their correspondents in all American cotton ports.

3. Importers and European buyers are earnestly requested to send corresponding instructions to their American shippers telling them that they must ship only by consenting parties. This applies also to the ocean carrier named in a through bill of lading issued in the interior.

All shipowners and agents who are so far not on the list are therefore requested to send in their consent immediately.

The success of the Liverpool committee is explained by the fact that those who had the matter in charge were in a position to force matters. This applies particularly to the bankers whose threat to refuse payment of cotton drafts unless accompanied by the new bills of lading would alone have been enough to bring any recalcitrant to terms. The method adopted with such success by the Liverpool conference might well be adopted by others who are trying to improve trade methods.

Seasonable Fabrics.

DRESS GOODS.

The dress goods market is in better condition now than it was earlier in the season. Orders are coming in more freely on light weight spring fabrics and everything points to a healthy trade during the remainder of the season, especially on wool batiste, henriettas, nun's veilings, etc., in the popular shade. Panamas and light weight serges are very popular especially in navy, brown, royal, myrtle, Copenhagen, etc., in qualities ranging from 50 cents to 75 cents.

Mohairs and sicilians are taking very well this season in the usual colors, black, navy and cream. This branch of the trade has not felt the dullness that has affected in other branches.

The fall dress goods business has not opened up with as much activity this season as was hoped for, although the lines are very attractive. There is no doubt in the minds of the selling agents that the trade will improve during the season. Buyers are timid about placing future orders and are holding off in the belief that goods will be easily secured when they are needed. The mill people say that they will not make up goods to any extent in excess of orders, and therefore advise the trade to place their orders early for their own protection.

Broadcloths will again be the leading material for the fall and winter seasons. It is predicted that the demand for broadcloths will be greater this season than ever, especially in self striped effects.

Everything in dress goods has turned to stripes. The principal weaves will be hair lines, herringbones and diagonals. Fig. 1 shows a stripe from a popular line sold by F. Vietor and Achelis at 70 cents, 54 inches wide.

Unfinished worsteds and soft finish panamas are coming in very strong. It is very evident that these goods will be among the leading fall fabrics.

COTTONS.

Sheer white goods such as India linons, Persian lawns, nainsooks, etc., are selling very freely, especially in the better grades. There is also a good demand for checked and barred white lawns on goods costing from 10 1/2 to 15 cents.

There have been a number of calls for Galatea cloth and 36-inch percales, but most of the buyers think that these goods are too high. They feel as though 10 1/2

cents is enough for an 84-count percale, and object to paying 11 1/2 cents, which is the price that is being asked today.

The spring lining business has been good this season. Prices have been reduced about 10 per cent., and the manufacturers say that trade in general has been very good.

Silk and cotton mixed goods in the pastel

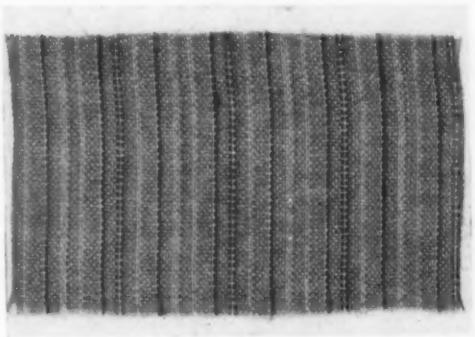


FIG. 1.

tints are receiving a great many reorders. The "Seco" silk made by the Newmarket Mfg. Co. and sold by Samuel Eiseman & Co. at 23 cents a yard has attracted considerable attention in the market, as it is fully 5 cents a yard cheaper than any other cloth of this character.

For the past 60 days the condition of the cotton goods market has been very unsettled. Prices on all staple brands of bleached and brown cottons have been reduced to what is considered normal quotations.

At present conditions are changing very fast and confidence is being restored. There has been a steady demand for 4/4 bleached goods such as Fruit of the Loom at 9 cents, Hills at 9 cents, Lonsdale at 8 3/4 cents and Hope at 7 3/4. The buyers feel confident that these goods will not be cheaper for some time to come. There is a growing sentiment that the future trade will be very good.

The reduction of about 20 per cent. on sheets and pillow cases has improved business in this branch of the trade. A great many of the buyers anticipated this reduction and let their stock run low so as to get their new stock at the low prices.

The demand for Amoskeag apron ginghams at 6 cents a yard has been very good, in fact it is impossible to secure a complete assortment in the market for immediate shipment.

Dress ginghams such as Toile du Nord, Bates' seersucker, AFC ginghams, are in demand, but the reorders on these goods have not been as large as in former seasons.

SILKS.

Most of the buyers have visited the market and returned home, leaving a great many orders for immediate shipment. While these orders have not been as large as in former seasons, the manufacturers feel fairly satisfied with the volume of business, and predict that the reorders will amount to more this season than in former years.

Rough pongees and foulards are the largest sellers. The demand for these goods is steadily increasing, especially the rough pongee. L. & E. Stirn, makers of Mirage silk at 92 1/2 cents, say that the demand for Mirage is much larger than what they anticipated.

Rogers & Thompson report that the sales on Rajah and Shah are increasing as the season progresses. The prices on these cloths are 95 cents and 72 1/2 cents respectively.

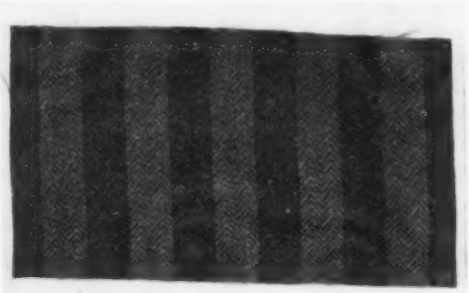


FIG. 2.

The demand for foulards in a large range of beautiful patterns in Copenhagen, brown, light blue, tan, raspberry and navy grounds is very good. Dotted foulards are having their usual run.

Satin faced silks, such as Messalines, are being offered at very reasonable prices and

are selling very freely in all of the seasonable colors.

Stripes are taking the lead over plaids and checks in 19-inch fancy taffetas. These stripes consist mostly of the self-colored stripe, from 1/8 to 1/2 inch, in a cheveron weave. Fig. 2 shows a pattern from a popular line sold by Doherty & Wadsworth at 72 1/2 cents for 19-inch goods.

On account of the number of popular shades this season, 19-inch colored taffetas are selling well. In order to have a complete stock it is necessary to carry about five shades of blue, four shades of brown, three shades of green, along with the standard colors.

The demand for black taffetas is not as strong during the spring months as in the fall, but prices have been reduced so that it is possible to buy a 36-inch black taffeta at 75 cents that formerly sold for 90 cents.

STYLE SUGGESTIONS FOR WOOLEN MANUFACTURERS.

The general tone of the market has improved very much. Whereas a month ago it was difficult to get customers to accept even the light weights which they had on order, many are now calling these in, and are looking to replace goods which were cancelled.

While this replacing of cancelled orders it is an indicator of the tendency, and it rather foretells a shortage of piece goods later. As the Easter season comes very late this year there is still some time left for the trade to wake up to the fact they will need goods.

Spring overcoatings are selling very well in the covert fabrics principally, and the better grades seem to have a better sale than the cheaper fabrics. There is some demand for grey worsted unfinished goods also and here as in the covert overcoatings the better grades are in demand.

Worsted suitings in pencil stripe effects are much in demand, and usually in a stripe about five-eighths of an inch apart, black, blue and brown grounds striped with white worsted or silk.

In light weight worsteds the stripe effects are selling best, but while buyers are in need of these, many of them think by waiting awhile they will be able to buy them cheaper. This idea is helped by the many price reductions which have been made. Some manufacturers are so anxious to secure business that they are selling their goods below cost, thinking that when the business comes later they will be able to raise the price enough to compensate for the loss. This selling so low has created a very hard competition and has caused many makers to reduce their price after they had taken a number of orders. This has been particularly demoralizing and has not helped them any for they have only gotten sample pieces anyway.

The bulk of the orders has been placed on heavyweights. One prominent line of worsteds was quoted as being withdrawn from all except the book tailors, which of course was true for they were the only people left to buy them. The others all placed their orders earlier, and so for that matter all lines are withdrawn except from the book tailors. The trade generally are waiting for something striking to be brought out. A few of the leading lines of heavyweights might be used as a guide for any additional ideas to be made now. First and foremost in the minds of the trade is a line of all worsted cross dyes, weight 17 ounces; everybody is talking about them. The samples shown are exceptional value.

The next in prominence is a line of stripe kerseys sold at $1.50 and styled after the patterns of a standard and well known grade. Unless a manufacturer has had experience on kerseys, in these times he better stay clear, for it is often a whole year before a good manufacturer, who has not been used to kerseys can make them. The writer knows of one of the best manufacturers in the State of Massachusetts who was a year and a half getting a kersey right and piled up hundreds of pieces in the interim.

Wallach, Stoeller & Co. with a line at 67 1/2 cents, and Howe & Mackay with one at 70 and E. B. Moore & Co. at 75, covered the range of the cheaper wool goods very creditably and all three are lines worthy of

careful study, for these are fabrics which have not been having a large sale of late except in high priced grades.

One of the most sightly wool fabrics is that shown by Kenyon, Hoag & Capwell and made by E. C. Caswell & Co., of Bloomsburg, Pa.; this is sold under the Allegheny ticket at 75 cents.

Probably one of the most talked of lines is that of the American Woolen Co., sold at $1.07 1/2. This is a piece dye and it is reported that one buyer placed an order for one hundred thousand yards. This is an all worsted fabric and it is practically useless for any one else to try to compete on it, for no other organization in the country has the facilities to get the stock required.

The American Woolen Co. for some years made coverts with mercerized and without, and a short time ago they disposed of all the stock goods of this character, but just as soon as they were sold the demand sprang up, and they have made two lines in the Assabet Mills. One sells at $1.37 1/2 and one at $1.55, and both are reported as selling freely.

Geo. H. Gilbert Co. also have brought out some new styles in their $1.22 1/2 covert.

The La Porte Woolen Mills of La Porte, Indiana, opened a cassimere fabric at $1.00 and advanced it to $1.05. This contained plenty of cotton but it is the finish and the colors which have made it sell. This is also true of the lines sold by the Appleton Woolen Mills at $1.05 and $1.20.

Ethan Allen showed a line of overcoating, soft finish, fancy effects at $1.37 1/2 which are good guides along this line.

The foregoing fabrics have been quoted very extensively by buyers as the leaders, and while the bulk of the business on sample piece orders has been done, there are always places for new fabrics of exceptional value, and if they are made along the lines of the fabrics mentioned, business will result, provided the colors are correct. The tendency is away from browns and towards the olive and drab tones.

Usually by this time of the year an idea can be obtained of what the cloak and suit trade will buy, they are very much at sea as yet, although it is thought that stripe broadcloths in about 16 ounces weight will sell for cloaks. Every one however is looking for some novelty.

It is a question whether stripes will sell as freely next season. Many large buyers do not think so, giving checks and plaids the preference.

THE LEGITIMATE COTTON EXCHANGE.

BY HARVIE JORDAN, in the Cotton Journal.

What are the functions of a legitimate cotton exchange? If this inquiry is fully discussed by all interests identified in one way and another with the cotton industry it would doubtless show many and varied opinions. The cotton exchanges as now conducted have been subjected to much adverse criticism by the leading representatives of, and sympathizers with, the great masses of the people who are engaged in the production and legitimate handling and consumption of the great staple crop.

On the other hand the exchanges have found representatives, not only from the official membership of those institutions, but representatives of the legitimate cotton trade who have endeavored to meet adverse criticism and to the best of their ability defend the acts and doings of the exchanges as fair and just to all traders. One thing seems to be clearly settled in the minds of shippers, exporters, cotton merchants and spinners, both in this country and abroad, that cotton exchanges maintained somewhere within reach of commerce, where future dealings can be carried on, are necessary to the life of the legitimate cotton trade under existing conditions. If we grant, without argument, that these conclusions and assertions on the part of the legitimate cotton trade are true, and that the interests of the growers are best subserved through the maintenance and operations of the exchanges, the next question to be asked is, can there be enactment of laws, both State and Federal, which will force the exchange to do a strictly legitimate business and at

the same time outlaw the baneful and destructive influences of speculation or gambling in cotton futures? We have gone to the expense and trouble of presenting this phase of the situation to some of the ablest and brightest legal minds in the whole country, because The Cotton Journal does not wish to, and will not knowingly, make war upon any institution which can be legally conducted as a necessary adjunct to the great cotton trade of this country.

A DIFFICULT UNDERTAKING.

That it will be quite a difficult undertaking by our law-making bodies to enact statutes regulating the large cotton exchanges in this country which will separate the "chaff from the grain," that is, the legitimate transactions from those which are purely speculative, is sure to follow the enactment of any law on this question. We beg to quote herewith some strong opinions which we have specially had rendered on this important subject by men who have made a deep study of the situation, from a legal and moral standpoint:

First: The organization of the business world is such that the purchase and sale of commodities for future delivery is a necessary function of that organization and to destroy that function or materially to impair it would bring about disturbance and injury of a widespread character.

Second: The illegitimate use of this function by the speculator is to a large extent a necessary evil and that illegitimate use of the function is so closely interwoven with the legitimate use of the function that it is extremely difficult to separate them.

Third: That one illegitimate use of the function, however, the bucket-shop, is an unmitigated evil, which can and ought to be destroyed root and branch.

Fourth: That the States in the Union where these great exchanges are established ought to pass rigid statutes regulating the exchanges that operate within their limits and that regulation ought to extend to the following subjects:

(a) To the prohibition and punishment of wash sales—that is, fictitious sales made by brokers to each other without reality, which are represented as real and which are made to effect the course of the market.

(b) The rigid prohibition and punishment of a broker bucketing his orders—that is, placing orders which he gets to purchase cotton against orders which he gets at the same time to sell cotton without the execution of any contracts with another broker on the floor of the exchange.

(c) The establishment by statute of a method of quoting the spot market, based on the actual sales of the actual cotton made on the day the quotation is fixed and punishing any departure from the actual sales in making quotations.

(d) The establishment of the differences between the various grades of cotton also based on the actual sales of the respective grades.

(e) The establishment by statute of the rule that where basis middling is used in delivering cotton on contracts, no more than three grades of cotton shall be delivered on each 100 bale contract.

(f) The prohibition against a broker accepting a contract to buy or sell cotton on the floor of the exchange from any person not actually engaged in the cotton business, unless upon the deposit of $5.00 per bale in cash as a margin.

While it may appear from the above that it will be difficult to confine trading on our large cotton exchanges to strictly legitimate dealings, it is also clearly set out that the present cotton trade of the world demands and requires some medinm through which future trading can be carried on.

FUNCTIONS OF COTTON EXCHANGE.

The functions of legitimate cotton exchange are the buying and selling of spot cotton by those legitimately engaged in the cotton industry for future delivery in order to facilitate the requirements of the business. The manufacturers, under existing custom, must have some plan by which their contracts can be made for the future delivery of cotton to meet their wants, and the cotton merchants or exporters, who take these orders must have some medium where

they can protect their contracts. There has never been any fight made against a strictly legitimate cotton exchange by the Cotton Journal, the Southern Cotton Association or the Farmers' Union. The fight has been made against these large exchanges as at present conducted, where the speculative or gambling transactions daily taking place largely predominated and which were detrimental and disastrous to every phase of the legitimate cotton industry and more especially the productive feature of the industry. We have never stood for the local cotton exchange because we were satisfied that they were not necessary adjuncts to the legitimate cotton trade and that dealers and manufacturers could get along as well without them as with them. We have uncompromisingly opposed the "Bucket Shop" because such institutions are totally unnecessary, and are an unmitigated evil in every community where they existed.

RESTRICTED USE OF EXCHANGE.

Can we enact legislation whcih will confine the transactions of the large exchanges to strictly legitimate measures? We believe it can be done without being destructive or hurtful to those institutions. Enact legislation which will prohibit any person who buys or sells a contract of cotton for future delivery from making a settlement of such contract on a cash basis under penalty of heavy fine or imprisonment. Let no man deal in an exchange unless he is legitimately engaged in the cotton industry and require him to file an affidavit to that effect or procure a license to trade in the exchange. Force every man who sells one hundred bales of cotton or more to deliver his contract in spot cotton of even running grades, and with no grade lower than two grades under middling. If legislation of this kind were enacted into law the purely speculative trader or the gambler would lose his avocation as a dealer in cotton futures, and the broker who violated the law would be compelled to suffer a heavy penalty. If the big exchanges are sincere in their desire to get down to a strict legitimate business, let their officers and members, and those who need them for legitimate purposes aid our law makers in passing strong and wholesome laws along these lines.

Let them assist in weeding out the purely speculative features and incorporating only those customs which will stand the criticism of just and equitable laws as applied to all other lines of business. The big cotton exchanges must conform to the strict requirements of legal business ethics or the present strong sentiment of the people will ultimately force them out of this country.

SYSTEMATIZE MARKETING COTTON.

If the South will continue its present campaign in the erection of warehouses at convenient points and operate in connection with such storage facilities a financial system which will enable the growers to market the crop slowly enough to meet only the legitimate needs of the spinners, then the establishment of strictly spot cotton exchanges in the cotton belt would serve every purpose of the legitimate cotton trade. But these facilities have not yet been fully provided for and pending their establishment the cotton trade will continue to hedge their purchases and sales in cotton exchanges, either in this country or Europe.

The effort now to be made is to force by legal enactment the future management of the large cotton exchanges in this country and require them to do a straight, legitimate business or cancel their charters or licenses. It is contrary to every rule of legitimate business that the price of so valuable a commodity as cotton should daily fluctuate upon such wide margins. It is ruinous to the business of the legitimate cotton trade to have the business of our great cotton exchanges dominated and controlled by traders who neither deal in nor handle spot cotton, yet they handle annually millions of bales represented on tissue paper. If the entire crop can be manufactured into yarns and cloth each year and sold without that intense speculative incumbus which characterizes trading on our cotton exchanges, why cannot the raw cotton be handled in the same way? We believe it can be. We believe the time has come when the strong arm of the law should be invoked to suppress that character of wholesale speculation

in cotton futures which as it stands today is a blot on American civilization. The problem can be solved rightly if the legitimate cotton trade of the country, backed by our law-makers, will do their full duty.

"CIF AND SIX" COTTON.

The system of buying cif cotton in the old country is carried on in the following manner: The Lancashire cotton mill manager attends the Liverpool or Manchester market at least once a week, not necessarily for the purchase of cotton, but to keep in touch with the market. His broker is all the time keeping him posted as to the quantity and grade of cif cotton being offered by the different merchants, as these merchants submit quotations daily to the various brokers. When the spinner is ready to make a purchase he consults with his broker, to whom he makes known the grade and quantity of cif cotton he requires and the months he desires delivery. If he wishes the purchase to be made from any particular merchant the broker naturally endeavors to execute the order in accordance with the views of the spinner. Let me remark in passing that there is a great difference in the quality of cotton received from different merchants, though the classification may be the same. One season a certain merchant will have good cif cotton, bang up to the mark, while the next season some other merchant will have struck the best style of cotton and be prepared to give the spinner the benefit of his good selection. The spinner can purchase any grade of cif cotton he desires, such as good middling, fully middling, etc., but of course the grade is stated at the time the purchase is made, and a contract given to the broker and spinner with full particulars of the transaction.

We will assume the spinner purchases, through his broker, 100 bales cif and 6 per cent. cotton on the second of March for delivery in June. Before the cotton arrives a provisional invoice is made out to the spinner, based on American weights, with 6 per cent. allowance for tares and bands. The spinner, by arrangement, can either take the cotton and pay for it as per this "provisional" invoice, or take it on Liverpool or Manchester weights, which shows conclusively that the merchant has good faith in American weights, and also in the 6 per cent. allowance for tares and bands being ample, as he agrees to be debited with any shortage in weights allowed, but requires payment for any excess over the provisional invoice. When the cotton arrives the merchant advises the broker who in turn advises the spinner. The merchant has a sample of about a quarter of a pound of cotton drawn from each bale—from one side of the bale only—and submits them to the broker, for approval of the spinner. If the out-turn is not satisfactory the spinner may reject any bales he considers not fully up to quality, though of course he does not have matters entirely his own way in this respect, as the merchant may consider them up to standard. In these cases the broker endeavors to arrange the matter amicably between the two principals by getting each to make concessions, but if they are still unable to fix upon a satisfactory basis for settlement the matter is taken to arbitration and each side selects an arbitrator who appraises the cotton independently. If these arbitrators cannot agree the matter is taken before the cotton association who appoint an umpire to value the cotton and whose decision is final. Sometimes the whole 100 bales tendered is rejected by the spinner and in that case the merchant has the option of tendering a fresh lot which he considers will be satisfactory. Failing to do this the spinner may buy 100 bales in the open market and debit the merchant with any loss in price he sustains.

Following are copies of invoices of an assumed purchase of 100 bales of cotton at 12 cents per pound, made out in the three different forms by which the spinner has the choice of buying American cotton in the Liverpool market. The gross weight is the same in each case and the values are given in American money for easy comparison.

AMERICAN (PROVISIONAL) INVOICE. (LIVERPOOL MERCHANTS' INVOICE TO SPINNER.)

100 Bales "Cif" Cotton @ 12c. per lb.: —Gross Weight	48,000 lbs.	
Less 6% allowance for tare and bands	2,880 lbs.	
	45,120 lbs. @ 12c. =	$5,414.40
Less Cost, Insurance and Freight		290.00
(American weights of each bale attached)		5,124.40

LIVERPOOL MERCHANTS' INVOICE TO SPINNER ON LIVERPOOL WEIGHTS "CIF TERMS."

100 Bales Gross Weight,	48,000 lbs.	
less	200 lbs.	double draft, 2 lbs. per bale
	47,800 lbs.	
less	864 lbs.	bands 720 (10 bands weigh 12 lbs.)
	46,936 lbs.	
less	1,676 lbs.	tares (4 lbs per 112 lbs.) (cwt.)
	45,260 lbs. @ 12c. per lb.=	
		$5,431.20
Less Cost, Insurance and Freight		290.00
		5,141.20

LIVERPOOL MERCHANTS' INVOICE TO SPINNER ON "SPOT TERMS."

100 Bales Gross Weight,	48,000 lbs.	
less	200 lbs.	D.D.
	47,800 lbs.	
less	864 lbs.	Bands
	46,936 lbs.	
less	1,676 lbs.	Tares
	45,260 lbs. @ 12c. per lb.=	
		$5,431.20
Less 1½ % discount		81.47
		5,349.73

The uninitiated would naturally wonder why spinners ever buy spot cotton. They are compelled to do so to get the quality and staple required for the better class of yarns. Spot cotton is all selected by the merchants and is offered in as even running grade and staple as it is possible to get under the present conditions of marketing the cotton in this country. A great many spinners never touch cif cotton simply on account of the irregularity in the grade and staple which, though not sufficiently inferior to be rejected, yet is not good enough to make A1 yarn.

There is not to my knowledge any arrangement specifying or guaranteeing the tares and bands to be not more than 30 pounds per bale. The allowance is 6 per cent., which on a 500-pound bale would equal 30 pounds, but as the average net weight of American bales is about 450 pounds, the allowance usually runs around 27 pounds per bale.

LANCASHIRE.

Feb. 19, 1908.

THE NATIONAL ASSOCIATION OF COTTON MANUFACTURERS.

The annual meeting of this association will be held in Huntington Hall, Massachusetts Institute of Technology, Boston, on Thursday and Friday, April 16 and 17. Among the subjects to be discussed are the following:

Arts of Weaving and Spinning.
Cotton Cultivation in West Africa.
Cotton Mill Stocks as Investments.
Egyptian Cotton.
Improvements in the Cotton Fiber from Storage of Seed Cotton.
Lubrication Tests in Cotton Mills.
Need and Advantages of a Cotton Exchange in New England.
Sea Island Cotton.
Steadying Power of Consolidation.
Steam Turbines.
What a Manufacturer Should Know About Coal.
Yarn Testing.

The total value of the exports from France to the United States for the fiscal year of 1906 was $107,240,548, an increase of more than 18 million dollars over 1905.

Canadian statistics give the aggregate trade of the Dominion for the nine months ended March 31, 1907, as $441,815,646, an increase of nearly 15 per cent. over the corresponding period of 1906.

Oldham, England, is the greatest cotton spinning place in the world. It has nearly 200 mills, containing 15,000,000 spindles and giving employment to 37,500 persons whose annual wages amount to 12 millions of dollars. Of two of its shops for the manufacture of textile machinery, one employs about 2,000 machinists and the other about 3,000.

CORRESPONDENCE AND NOTES

Upon Textile Topics At Home and Abroad.

THE EFFECT OF MOISTURE ON THE ELASTICITY AND STRENGTH OF YARN.

From Oesterreich's Woolen und Leinen Industrie.

It is only within comparatively recent years that the air of weave rooms has been moistened by mechanical means. The advantage of this process consists not only in purifying the air, which is especially important in the preparatory rooms of flax spinning mills, but in an increase of the elasticity and strength of the yarn. There are still many weaving mills in which these points receive little or no attention. Every year it is seen that the warp does not run as well in summer as in other seasons. Nevertheless, in many mills no measures are adopted for correcting this defect, the principal reason being the first cost of the installation. There are, however, too many mills in which the work is allowed to run badly because it always has done so.

The importance of regulating the moisture in mills as well as keeping the warp yarn of the right quality is shown by the results of the following tests of the elasticity and strength of yarn under different conditions. It is not necessary to have a thorough knowledge of the conditions effecting mill work to recognize from these tests the importance of apparatus for moistening the air. The tests were made with 12 samples of yarn as follows:

1. No. 20 cotton yarn, grey; dry and damp.
2. No. 20 cotton yarn, bleached; dry, damp and sized.
3. No. 20 Medio cotton yarn, grey; dry and damp.
4. No. 20 Jaspe cotton yarn; dry and damp.
5. No. 40 yarn, grey (American cotton); dry and damp.
6. No. 40 yarn, grey (Egyptian cotton); dry and damp.
7. 2/40 cotton yarn, grey, hard twist, dry and damp.
8. 2/40 cotton yarn, bleached, hard twist; dry and damp.
9. No. 25 carded flax tow yarn, grey; dry and damp.
10. No 25 carded flax tow yarn, bleached: dry and damp.
11. No. 30 flax line yarn, grey, dry and damp.
12. No. 30 flax line yarn, bleached; dry and damp.

The tests were made with an automatic dynamometer. The thread used for each test was 40 inches long. It was wound for half its length around a drum to which one end was fastened. The testing weight was attached to the other end. Each of the twelve samples was tested 20 times in the dry state and 20 times in a damp condition. The test of the first sample resulted as follows:

NO. 20 COTTON YARN, GREY.

	20 Tests Dry.	20 Tests Damp.
Elasticity: Minimum	2.7%	3.4%
Maximum	3.6%	4.3%
Variation	.9%	.9%
Average	3.1%	3.9%
Strength: Minimum	22.3 ozs.	23.3 ozs.
Maximum	32.0 ozs.	35.0 ozs.
Variation	9.7 ozs.	11.7 ozs.
Average	25.5 ozs.	28.1 ozs.

This shows an increase of 25 per cent. in the elasticity and 10 per cent. in the strength of the damp yarn. While these two percentages vary widely yet an increase of 10 per cent. in the strength is an important gain. The lowest elasticity and strength were found in the same thread; likewise the maximum elasticity and strength were found together.

The second series of tests resulted as follows:

NO. 20 COTTON YARN, BLEACHED.

	20 Tests Dry.	20 Tests Damp.	20 Tests Sized.
Elasticity: Minimum,	2.6%	3.8%	2.3%
Maximum	4.4%	4.6%	3. %
Variation	1.8%	.8%	.7%
Average	3.7%	4.2%	2.6%
Strength: Minimum,	19.7 ozs.	20.3 ozs.	26.3 ozs.
Maximum	28.3 ozs.	28.7 ozs.	36.3 ozs.
Variation	8.6 ozs.	8.4 ozs.	10. ozs.
Average	24.7 ozs.	24.8 ozs.	32.3 ozs.

The damp yarn showed an increase of 14 per cent. in the average elasticity, while in the strength there was an increase of but 4 per cent., compared with the dry yarn. Compared with the dry yarn the sized yarn shows a loss in elasticity of 30 per cent. The extremes of elasticity as well as of strength were encountered in different threads of the dry yarn. In the case of the wet yarn the extremes of elasticity and strength were encountered in the same threads respectively. The average elasticity of the sized yarn was 30 per cent. below that of the dry yarn and 38 per cent. below the damp yarn. This decrease in elasticity was accompanied by an increase in strength of 30 per cent. compared with the dry yarn and practically the same amount as compared with the damp yarn.

The third series of tests resulted as follows:

NO. 20 MEDIO COTTON YARN, GREY.

	20 Tests Dry.	20 Tests Damp.
Elasticity: Minimum	2.2%	3. %
Maximum	3.1%	4.2%
Variation	.9%	1.2%
Average	2.7%	3.6%
Strength: Minimum	14.7 ozs.	15.7 ozs.
Maximum	23. ozs.	24.7 ozs.
Variation	8.3 ozs.	9. ozs.
Average	18.6 ozs.	20.9 ozs.

Here we find an increase of 33 1/3 per cent. in the elasticity and an increase of 12 1/2 per cent. in the strength of the damp yarn.

The results of the fourth series of tests were as follows:

NO. 20 JASPE COTTON YARNS.

	20 Tests Dry.	20 Tests Damp.
Elasticity: Minimum	2.7%	3.2%
Maximum	3.6%	4.2%
Variation	.9%	1. %
Average	3.1%	3.7%
Strength: Minimum	18.7 ozs.	18. ozs.
Maximum	29.3 ozs.	29.3 ozs.
Variation	10.6 ozs.	10.3 ozs.
Average	23.8 ozs.	24.1 ozs.
Variation	16. ozs.	13.4 ozs.

Here we find the damp condition showing a much larger increase, 20 per cent., in elasticity than in strength, 1.2 per cent.

The fifth series of tests resulted as follows:

NO. 40 YARN, GREY (AMERICAN COTTON).

	20 Tests Dry.	20 Tests Damp.
Elasticity: Minimum	1.7%	2.4%
Maximum	2.9%	3.4%
Variation	1.2%	1. %
Average	2.4%	2.9%
Strength: Minimum	6.7 ozs.	7.3 ozs.
Maximum	11.3 ozs.	13.7 ozs.
Variation	4.6 ozs.	6.4 ozs.
Average	9.1 ozs.	10.6 ozs.

This shows an increase of 20 per cent. in the elasticity of the damp yarn and of 17 per cent in strength.

The tests of the sixth sample resulted as follows:

NO. 40 YARN, GREY, (EGYPTIAN COTTON).

	20 Tests Dry.	20 Tests Damp.
Elasticity: Minimum	2. %	2.6%
Maximum	3.2%	3.8%
Variation	1.2%	1.2%
Average	2.5%	3.1%
Strength: Minimum	8. ozs.	7.7 ozs.
Maximum	15. ozs.	13.7 ozs.
Variation	7. ozs.	6. ozs.
Average	11.2 ozs.	11.3 ozs.

Here we find an increase of 24 per cent. in the elasticity and 9 per cent. in the strength of the damp yarn.

The seventh series of tests resulted as follows:

2/40 COTTON YARN, GREY, HARD TWIST.

	20 Tests Dry.	20 Tests Damp.
Elasticity: Minimum	1.8%	3. %
Maximum	3. %	4.2%
Variation	1.2%	1.2%
Average	2.4%	3.6%
Strength: Minimum	18.3 ozs.	14. ozs.
Maximum	27.6 ozs.	33.7 ozs.
Variation	9.3 ozs.	19.7 ozs.
Average	24.2 ozs.	27.3 ozs.

There was an increase of 50 per cent. in the elasticity and 13 per cent. in the strength of the damp yarn.

The tests of the eighth sample gave the following results:

2/40 COTTON YARN, BLEACHED, HARD TWIST.

	20 Tests Dry.	20 Tests Damp.
Elasticity: Minimum	3.3%	2.5%
Maximum	4.5%	3.8%
Variation	1.2%	1.3%
Average	3.9%	3.1%
Strength: Minimum	15. ozs.	18.3 ozs.
Maximum	31. ozs.	31.7 ozs.
Average	25.6 ozs.	23.3 ozs.

Here we find a loss of 21 per cent. in the elasticity and a loss of 9 per cent. in the strength of the damp yarn as compared with the dry yarn.

The tests of the ninth sample gave the following results:

NO. 25 CARDED FLAX TOW YARN, GREY.

	20 Tests Dry.	20 Tests Damp.
Elasticity: Minimum	.6%	1.3%
Maximum	1.1%	1.6%
Variation	.5%	.3%
Average	.8%	1.4%
Strength: Minimum	32.7 ozs.	49.3 ozs.
Maximum	74. ozs.	76.3 ozs.
Variation	41.3 ozs.	27. ozs.
Average	54.2 ozs.	63.3 ozs.

A comparison of these figures shows the very large increase of 75 per cent. in the elasticity of the damp yarn, the increase in the strength being 17 per cent.

Very striking results were obtained by the tenth series of tests:

NO. 25 CARDED FLAX TOW YARN, BLEACHED.

	20 Tests Dry.	20 Tests Damp.
Elasticity: Minimum	.5%	1.1%
Maximum	.9%	1.5%
Variation	.4%	.4%
Average	.7%	1.4%
Strength: Minimum	14. ozs.	34.7 ozs.
Maximum	45.7 ozs.	56.3 ozs.
Variation	31.7 ozs.	21.6 ozs.
Average	26.1 ozs.	46.4 ozs.

The elasticity of the damp yarn was just double that of the dry yarn, while the strength of the former showed an increase of 78 per cent.

The eleventh series of tests gave the following results:

NO. 30 FLAX LINE YARN, GREY.

	20 Tests Dry.	20 Tests Damp.
Elasticity: Minimum	.6%	1.1%
Maximum	1.1%	1.9%
Variation	.5%	.8%
Average	.9%	1.4%
Strength: Minimum	52. ozs.	57. ozs.
Maximum	92. ozs.	101. ozs.
Variation	40. ozs.	44. ozs.
Average	75.2 ozs.	75.7 ozs.

This shows an increase of 55 per cent. in the elasticity and 7 per cent. in the strength of the damp yarn.

The twelfth and last series of tests gave the following results:

NO. 30 FLAX LINE YARN, BLEACHED.

	20 Tests Dry.	20 Tests Damp.
Elasticity: Minimum	.6%	1.1%
Maximum	1.2%	1.8%
Variation	.6%	.7%
Average	1. %	1.4%
Strength: Minimum	31. ozs.	41.7 ozs.
Maximum	74.3 ozs.	84.3 ozs.
Variation	43.3 ozs.	42.6 ozs.
Average	54. ozs.	60. ozs.

Here we find an increase of 40 per cent. in the elasticity and of 11 per cent. in the strength of the damp yarn. It will be noticed from the comparison of tests 11 and 12 that the strength of the dry yarn was reduced 28 per cent. by bleaching. In the case of the damp yarn the bleaching process resulted in a reduction of 20 per cent. in the strength.

ENGLISH NOTES.

By Our Special Correspondent.

If that is of consolation, American manufacturers may reflect that they are not alone in feeling a check to textile business. Belfast flax spinners are working now only 37 hours a week. One or two Scotch tweed mills are closing and the rest are in need of work. Huddersfield fine worsted men find new business unduly hard to get. Weavers of cottons complain loudly that they are making no money and relatively few manufacturers in any class do well except out of existing contracts.

Difficulties in wool goods are aggravated by differing ideas as to prices. Even the makers of low tweeds feel a change in the pulse of the market. Drapers buy reluctantly, but clothiers are having the usual Whitsuntide rush. We have not yet gained by the cheapening in money which has proceeded at the rate of 3 per cent. in 3 weeks. Slack times in the metal trades hold domestic business down and foreign conditions are adverse to export.

* * *

Under the compulsion of rivers authorities woolen manufacturers and others are at considerable expense in putting plant down for the purification of their waste waters. The outlay means easily $5,000 in many cases. There are a series of tanks to provide for settling out solids, a central well to receive the flow at first hand, pumps to feed the tanks and then mechanical agitators for the tank in which the grease is to be mixed with acid. On some concerns the cost is

burdensome and the opportunity of passing the effluent into public sewers at a charge between 2 cents and 8 cents a thousand gallons is appreciated. This is not always an available option and we are to have new legislation on this matter. In Germany authorities seem to be more lenient than in the North of England. The Wupper, which receives the trade waste of Elberfeld and Barmen has been called by a most temperate writer "the most damnably ill-used watercourse in the world." But it is hard to conceive of dirtier rivers than our Calder and Aire.

* * *

A lecturer relates that little more than a century ago a ship was held up in the Mersey because of a false declaration. Her master had declared five bags of cotton on board as American and the Customs said that it was impossible for America to have grown such a quantity. The anecdote looks too good to be true. Yet the records say that in 1770 Liverpool received only three bales from New York and only seven bags and three barrels of cotton from Virginia, Maryland, Georgia and Carolina. A quarter of a century later England received only 5,340 bales (of 300 lbs.) from the United States. The earlier cotton was Brazilian and East and West Indian and 60 cents was not an embarrassing price to pay for it. Nor was five times the present price excessive for yarn.

* * *

A machinery expert puts forth the opinion that could one mill get its cotton year by year from the same good plantation, 20 per cent. in working expenses might be saved. Grounds for this supposition are not stated and were the opinion generally held a lot of estate-buying by spinners might take place. Growing for self consumption is not a favored idea. It has been axiomatic thus far that spinners in cotton growing shall grow for the highest bidder. Seasonal variations, the magnitude of raw stock on hand and the fluctuation of values and possibly of demand for yarn discourage the notion. The belief that something can be saved by better farming, ginning and so on is common property. Between that and feeding one mill from one estate there is a broad margin of difference and proof is wanted of both propositions.

* * *

Linen manufacturers are counting on good business from a new quarter. Linen, heavily starched or sized, is supplanting silk for ladies' hats. The fabric is made up over a wire foundation into hat-shapes and is the better for waterproofing. A sizing that is approved for use where the fabric is to be rainproofed goes by the name of "Apparatin." It is a wheaten starch swelled with caustic soda and neutralized afterwards by acid. One proportion of it is soluble and one not soluble in water and so a solid substratum is left to be proofed upon.

* * *

Nobody claims yet the fortune that is waiting for the inventor of a fireproofing compound for textiles which will be unimpaired by washing. Methods in present use all employ soluble salts, chiefly common salt, alum, tungstate or phosphate of soda and sulphate of ammonia and are thus of limited utility. Flannelette is the fabric most needing to be made less combustible and it is pointed out that something depends on the raising process. Given a pile consisting of some long and some short fibers, straggling and loose, the flame strikes instantaneously and rushes up the surface of the garment. An even, close velvety pile is much less hazardous. For experiment compare cotton velvet with ordinary flannelette. But some chemical or other means is wanted to preserve from fire curtains and other hangings that have to bear contact with water.

* * *

The surgeon to the Bradford Anthrax Investigation Board advises willowing before washing wools likely to be infected by this disease. The germ is on the wool not in it and a good drumming has the apparent effect of lessening dust in carding and combing rooms. Cases in these departments have been scarcer since this order of proceedings was followed. Openers and sorters of wool are well protected by regulation measures, but from dust in carding

there is no refuge and anthrax has been becoming a comber's or carder's disease rather than a woolsorter's.

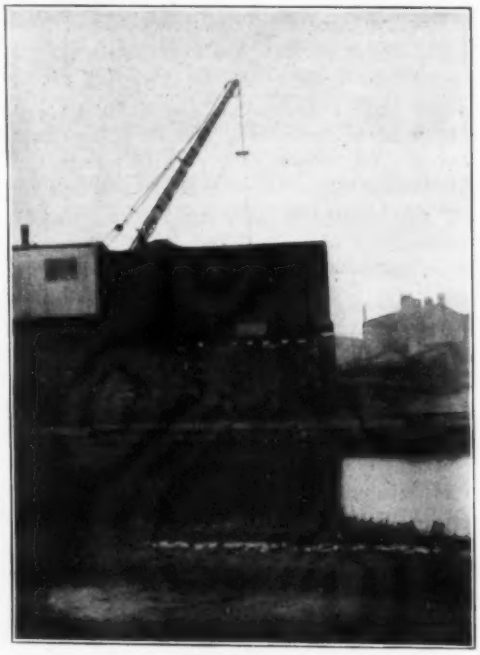
Persian wools are at the head of the list of deathdealers. It is supposed that anthrax-laden fleeces are not necessarily those of animals dead of the disease. Dust from an anthrax-stricken district may well come in wool from healthy sheep. Dr. Enrich prescribes soap and water rather than any disinfectant solution for use on the hands of men handling dirty wool. Except that liquid prevents the flying of dust, and is thus beneficial, this authority does not commend attempts to sterilize wool in unopened bales. After four hours' soaking he has found wool very imperfectly disinfected.

* * *

Some changes in the regulations governing the Bradford Conditioning House may be of interest to others who wish to prevent frauds. The changes come from a joint committee representing the City Council (owners of the place) and the Chamber of Commerce (standing for the customers). Every certificate issued is to be press-copied for purposes of record. Every duplicate is to be on colored paper with "duplicate" across the certificate's face. Certificates are all to be countersigned by a senior clerk and are in no case to be issued in the names of parties not the owners of the goods. Lots very variable in condition are to be so declared by the conditioners. Remarking or packing is to be done only by the House staff. Customers are not to be allowed to draw samples at the Conditioning House themselves. Tops tested are to have attached a ticket printed "Bradford Conditioning House." Finally it has been decided, in the interests of efficiency, gradually to replace the staff of youths attending at the ovens by young women.

* * *

"Yankee" asks whether difficulty is felt in making branch-works of our large combines abide strictly by the uniform list of selling prices. Severe disciplinary measures used against some managers who defied headquarters have not been without effect. Standard prices are generally well maintained, but there are always means of evading regulations and these are sometimes taken. Articles are described in books and papers as things they are not and are charged for accordingly. For example, brown dyeing may be done at the price of black, length or weight may be stated fictitiously. Obviously these subterfuges are exceedingly difficult of detection. The incentive to resort to them is less now than formerly and faith is much better kept than ever it was in the pre-amalgamation days when price leagues were broken as quickly as they were made. In the dyeing trade those understandings were little better than arrangements whereby the unscrupulous fleeced their straightforward colleagues.



A STEAM GRAB DISCHARGING COAL FOR A COMBINE DYEWORKS.

An exceptionally wonderful scientific discovery by a Berlin savant is reported in England. Photographic means of printing designs on textiles at a "very trifling cost" have been invented and a company for printing thus is being formed. A fair idea of the practicability of the process can be gained from the news that "carpets and

woolen and cotton fabrics of all descriptions" are to be printed. No doubt this is exactly the thing that carpet-buyers have been looking for.

* * *

An interesting and uncommon addition to a dyeing and finishing works some stories high is an external conveyor for goods. Working like the buckets on a dredger this transports pieces, press-papers and whatnot upstairs and brings treated goods down in constant streams. It improves on the usual elevator or the more primitive crane-hook. Outside another branch in the same establishment and on the canal bank, stands a steam grab, Fig. 1, working like the steam-navvy. This picks up small coal from the barges and deposits them in overhead coal-shoots in rear. The coal-carts receive their loads by gravitation and discharge at the furnaces a hundred yards away. There is nothing our combines are more disposed to economize in than cost of coal.

SPOOLING AND DRESSING WOOLEN AND WORSTED WARPS.

BY GEORGE F. HUSSEY.

It is necessary to have the machinery properly located and set up in order to get the best results in the spooling and dressing department. The machines should be placed in a good light. The bearings should be level, especially the reel bearings. I have been in mills where it was necessary to block the reel to prevent it from running down hill every time the section was changed. The pin holes in the rails were so crooked that the warp sections resembled a Virginia rail fence. The spool creel acted like a ship tossed about in a gale of wind. No man can dress a warp properly under such conditions.

I recall a case where a dresser tender upon going to a new position, found the warping frame and creel in a very bad condition. He went to the overseer and asked that the machine be repaired and set right. The reply he got was this:

"The machine has been running that way for the last ten years and you are the first man to complain; all your predecessors have made good work and there is no reason why you should not if you are fit for the job."

The dresser tender replied:

"I can do what the others did if you say so, but remember, I shall listen to no complaint from the weave room about high or low sections or bad dressing."

The machine was fixed at once.

Spooling the yarn is a very important process and much depends upon good work here in getting good work in the dressing and weaving rooms. Nothing is so discouraging to the dresser as badly spooled yarn. Under such conditions it is impossible to do good work. If it is necessary to have 18, 20, 24, 30 and 36 end spools the overseer should see that the spooler guides are set properly, so that the threads will not overlap one another. He should also see that the end threads are built up properly next to the spool head. The spooler should learn to tie a good square knot and break off the ends short. Care must be taken to have the proper length of yarn on each spool so they will not run short on the dressing frame. Otherwise much time will be lost in tying in pieces. The spooling machines should have the top friction rolls resting on the bottom rolls at each end and held down by a good strap properly weighted, in order to give a uniform tension on every thread. This will prevent slack threads when the spools run out on the dressing frame, and it will also result in uniform tension on the threads in the loom. The spooler drum should be covered with heavy canvas. The spools should be properly weighted so as to prevent slipping on the drum.

The bobbin pins deserve special attention; they should be firmly set in the frame and properly spaced, otherwise the spooler will have a great deal of trouble with the bobbins. If a pin is bent the yarn will begin to break when the bobbin is about half empty, and continue breaking until it runs out. This is caused by the irregular tension, which is greater when the yarn comes from one side of the bobbin than when it comes from the other. This defect also causes uneven tension on the thread, which becomes evident when the yarn is running on the dressing frame. It makes what the dressers call a "bum job."

The spooler rolls should be kept well cov-

ered with leather; a good spooler stop motion will also result in improvement of the work.

Let us assume that we have a heavy weight plaid to dress and that the following yarns are coming along from the mill:

All wool black slack twist 5 runs.
Dark olive slack twist 8 1/2 runs.
The two twisted 22 turns.
111 mix 3 1/2 runs.
875 mix 3 1/2 runs.
316 mix 3 1/2 runs.
58 mix 5 runs.

As the dresser reels are each 4 yards and 4 inches in circumference, the cuts are each made 13 turns. There is an order for 10

cuts and accordingly each spool should carry 90 holes of yarn. The dresser picks the pattern from right to left as it reads from left to right in the draft, shown in the illustration. The black and olive twist is placed at the bottom of the spool rack. Then the other colors come in the following order: 111 mix, 875 mix, 316 mix, 2 pattern spools at the top.

I always place at the bottom the color that comes first in the draft and then take them in order, finishing with the pattern spool at the top. When warping both black and white yarn I would advise placing the white at the bottom of the rack so that the dresser tender can see the threads to better advantage. When the dresser tender has the yarn through the reed I look the work over to see that every thread is in its place. When everything is all right he is told to go ahead. Constant care is necessary on the part of the overseer to prevent waste and obtain good results. The spooler should be instructed not to pull the yarn from the bobbins, but to spool it up close. He should also be instructed to save all the pieces that do not run out, then tie them in as other bobbins run out, keeping the sets even.

Suppose that a new lot comes along and that the ticket reads: "Lot 2,740, No. 214 mix, 3 1/2 run, 3,000 pounds in the batch, 2,000 pounds for warp, 1,000 pounds for filling, style 2,780, 84 cuts. The dresser tender should keep his eyes open and make sure that he gets enough warp yarn from the lot to make 84 cuts. It may take somewhat more or less than 2,000 pounds for such an order. He should tell the boss spinner to notify him when the 2,000 yards is spun, then calculations should be made to determine how much, if any, is required to complete the 84 cuts. When the right quantity is obtained the rest of the batch can be spun into filling.

The draft for style 2,780 calls for 3 colors: white 3 1/2 runs, black 3 1/2 runs, 214 mix 3 1/2 runs. Spools are required as follows:

4 38/40 spools 214 mix.
4 38/40 spools black.
4 38/40 spools white.

A spool will carry 48 holes of yarn. The warps are made with 8 sections, 7 cuts, with 12 rounds of the reel to a cut. The tickets for the spooler tender are written out as follows:

Style 2,780.
Lot 2,740.
214 mix, 3 1/2 run.
4 spools of 40 thread, 48 holes.
1 spool 38 thread, 48 holes.

When the order is dressed the yarn is all used up, there being no pieces lying around to attract the superintendent's attention as he passes through the room. The dresser tender should have a good system and carry it out. I have seen overseers of dressing who failed in this respect and who were constantly yelling at the spoolers, giving conflicting orders inside of two minutes and demoralizing the help generally. The spool-

ers and dresser tenders soon get tired of such a man. An overseer should not only have a good system, but keep his own counsel, be courteous, push the work along, and go ahead when sure he is right. He should not allow the dresser tenders or spoolers to dictate regarding the work. If they insist upon doing this he should dispense with their services. The overseer should fill the position from the ground up; never look back but always look ahead, and plan the work so that it comes out right, both as to quantity and quality.

I have been overseer of dressing, spooling, twisting and winding for 25 years and therefore speak from experience. There is a great difference in dresser tenders; some can get good results from tender yarn, while there are others who could do practically nothing with the same material. If there is a tie-up of tender yarn, the weight on the paddle should be reduced before starting to dress the warp. Give the spools just weight enough to steady them so the threads will not sag. It may be well to put a lag of leather on the pulley that drives the reel, so that the reel will not take up the yarn faster than it is delivered from the size rolls. Start up the machine carefully and when it is running feel the yarn with the flat of the hand to see whether the tension is right. If there is too much tension let out the reel belts, and in a few minutes the machine can be regulated properly. When it is once right let it alone. It is a great mistake to keep tinkering with the machine when it is doing good work. This results in high or low sections and a poor warp, the yarn will weave badly in the loom, and the goods will have section stripes for which the overseer will be called down.

I have for a long time been using an improved dressing creel and patent spring levers and have found that they give a uniform tension from the beginning to the end of the spool. There is much less breakage of yarn as the springs work automatically, and consequently the yarn does not get tight and overstrained when the spool runs down.

It is much to be regretted that the spooling and dressing departments are generally neglected. Mill managers seem to think that all their energies should be devoted to perfecting machinery and processes for the carding, weaving, spinning and finishing departments. They overlook the great improvement in the quality and production of cloth that can be effected by properly equipped and well managed spooling and dressing rooms.

Only the best spools should be used. It is anything but economy to save money by buying spools of inferior quality. There should be plenty of space around the machines, and racks provided for holding the yarn as it comes from the spooler. Much imperfect work is caused by piling spools up on the floor. When necessary a pattern spool should be used and thus avoid running yarn from bobbins. I make it a rule never to run bobbins, no matter how broken up the pattern may be. Threads run from bobbins are generally too slack, occasionally too tight, and never have the same tension as the yarn run from the spools. The dresser tender should arrange work on the different frames so as to avoid, as far as possible, changing the number of sections when changing from one order to another.

While the dresser tender is picking his pattern, the empty spools can be taken from the rack and the full spools for the next warp placed in position. At this time the beam can be set in the beamer so as to be in position when the dresser tender gets the warp ready for beaming. After the warp is tied in the overseer should read the pattern, while the dresser tender looks over the yarn in the reed to see that every thread is in its place. The space between the false heads on a beam should be about 3/8 of an inch wider than the width of the warp on the reel, in order to allow for the tendency to spread.

The steam engine was invented in 1767, but not until 1783 was it applied to carding and spinning machinery.

In 1788 power spinning of cotton yarn was first successfully accomplished in Beverly, Mass., although attempts had been previously made in Philadelphia, in 1775; in Worcester, in 1780, and in Bridgewater, Mass., in 1786.

COTTON MILL ORGANIZATION.

BY ACCOUNTANT.

A COMPLETE DESCRIPTION OF THE WORKING SYSTEM OF A FACTORY MANUFACTURING A SPECIAL PRODUCT WHICH IS MADE UP ONLY ON CUSTOMERS' ORDERS.

The fabric made is used for various purposes, but most extensively, perhaps, for sails for yachts, tires for vehicles, cloths for pottery manufacture, etc., and in the selling of which the company meets with lively competition from other manufacturers. Customers' specifications are submitted to all mills making the goods, and all other things being equal, the manufacturer who proposes to furnish at the lowest price usually gets the business.

In any line of business the one and only object which the manufacturer has in view is the making and disposing of his product at a profit, and in connection with the selling of the product any information which he may be able to obtain regarding the prices asked by his competitors is a distinct help.

Purchase Requisition No. 801

To the PURCHASING AGENT—

The following supplies will be required in our store rooms on March 24, 1906.

Symbol		On hand
605	2 Bbls x x Spindle Oil	20 gals

Date Feb. 6, 1906
Remarks Last lot was poor quality.

W. Brown Storekeeper
Approved C. H. B. Supt.

Ordered Feb. 7, 1906
Price 22¢ gal. deld
P.O. Number 2467

From United Oil Co.
Promised Feb. 14, 1906
C.R.G. Pur. Agent

AS1

Symbol	Material	Stored	Stock Max.	Stock Min.
605	x x Spindle Oil	Oil House	gal. 100	gal. 10
209	x A Kerosene "	" "	50	10

AS2

This market price is made up of two elements, the cost of the goods and added to this an amount for profit which the manufacturer considers will bring him a sufficient return on the capital which he has invested in real estate, plant and equipment. The cost of the goods is made up of the manufacturing cost and selling cost and the factory and sales organizations and systems are used for regulating and controlling these things.

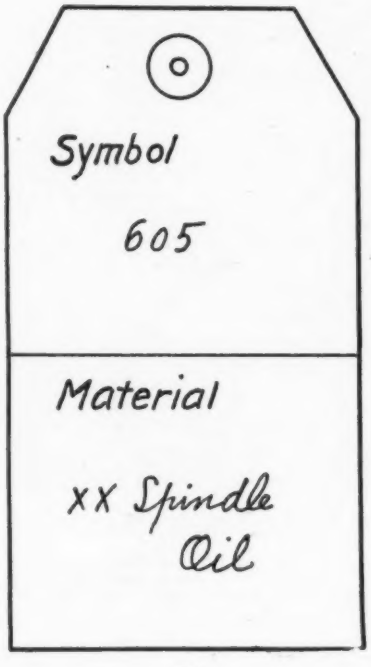
Material Received Report No. 1169

Date 2/24/06 On P.O. 2467 On Req'n 801
From United Oil Co.

Via N.Y.N.H.&H.R.R. Charges Paid
No. Packages 2 Bbls
Contents
105 gals xx Spindle Oil

W. Moore
Receiving Clerk

AS3



AS4

The purchasing end of the system will first be described. The storekeeper, a man placed in general charge of raw material and supplies of all kinds used in the works, makes requisition for all material requirements, except in special cases. The requisition used is form AS1. These are purchased in book form, original white, duplicate yellow and are numbered progressively as issued, the original being perforated across the top to facilitate removal from the book. In making up this requisition, the storekeeper writes under the column headed "Symbol" the symbol or stock number assigned the material wanted for identification purposes. A record of all symbols is kept in a loose leaf record, form AS2, alphabetically, describing material, telling where stored, stock requirements, etc. In column headed "On Hand," AS1, is entered the present stock. When dated and signed the requisition goes to the stock clerk. This clerk keeps a record of all material on hand

in a stock record book, form B1. In using this book the symbols assigned to the materials become the page numbers. Turning to the page indicated by the symbol on the requisition, the clerk proceeds to check the accuracy of the storekeeper's statement regarding the quantity of material on hand. If discrepancies are found, they are noted on the face of the requisition. The clerk also notes on the face of the requisition the last purchase order number on which material was ordered, the price paid when received. etc., and forwards to the superintendent. The superintendent, if approving, signs and forwards to the purchasing agent who makes out an order on vendor and fills out the lower part of the requisition.

Stock Record — Material: XX Spindle Oil — Quantity to be kept in stock: Max. 2 Bbls. Min. 10 gals. — Symbol: 605

Ordered					Received								Used			Used			Used		
Date	Req. & P.O. No.	Quantity Daily	Quantity Total	To be del'd	Date	Req. & P.O. No.	Quantity Daily	Quantity Total	Prices Unit	Price	Amt.	Trans.	Date	Quantity Daily	Quantity Total	Date	Quantity Daily	Quantity Total	Date	Quantity Daily	Quantity Total
1/1/06	801 2467	2 Bbls	2/246	1/10/06	1/4/06	801 2467	1/52.9	1/52.9	gal	22¢	11.44	Paid	2/3/06	40	40						
2/6	801 2467	2 "	4 "	2/24	1/8/06	801 2467	1/54-	2/106-	"	"	11.88	"	2/4	20	60						
					2/14	801 2467	2/105-	3/211-	"	"	23.10	"	2/5	26	86						

B1

Upon receipt of the material the storekeeper makes out a report, form AS3, in duplicate, sends original to stock-book clerk, and attaches a wired tag, form AS4, to the material or containers.

The stock record clerk enters the report of receipt of material and holds until invoice for shipment is received from the purchasing agent. When invoice is received, prices are checked, record of same made in stock book, receiving report is attached and papers returned to the purchasing agent, who takes a

Boston, Mass. Feb. 7 1906.

To United Oil Co.

Order No. 2467

Requisition	Symbol	
801	605	Please ship us the following—
		2 Bbls. XX Spindle Oil at 22¢ per gal.
		delivered F.O.B. our works. Must be in
		our store rooms by Feb. 14, 1906. and to
		be returned if not better than last lot.
		and charge our account.
		Ship marked STANDARD MILLS BOSTON, MASS. Via. N.Y.N.H.&H.R.R.

STANDARD MILLS
by C. R. Gray
Purchasing Agent.

B2

Four copies of the purchasing order, B2, are made, one going to the storekeeper, who receives the goods, one to the stock-book clerk, who makes a record of the order, the two remaining copies remaining with the purchasing agent, one being filed numerically and the other alphabetically with the requisition attached, in what is known as an unfilled order file.

copy of the order on vendor filed alphabetically in unfilled order file with requisition attached, notes prices charged on invoice, receipt of goods as ordered, attaches invoice and receiving report to order and requisition and forwards all to the accounting department.

(To be continued.)

PHOTOGRAPHY IN JACQUARD DESIGN.

BY FREDERICK L. MUELLER Mill Manager.
(From Zeitschrift fuer Textil-Industrie.)

To reproduce figures in woven fabrics it is necessary first to make a draft on design paper and then cut the jacquard cards to correspond. Owing to the large size of the squares representing the warp and filling threads, the draft is necessarily made on an

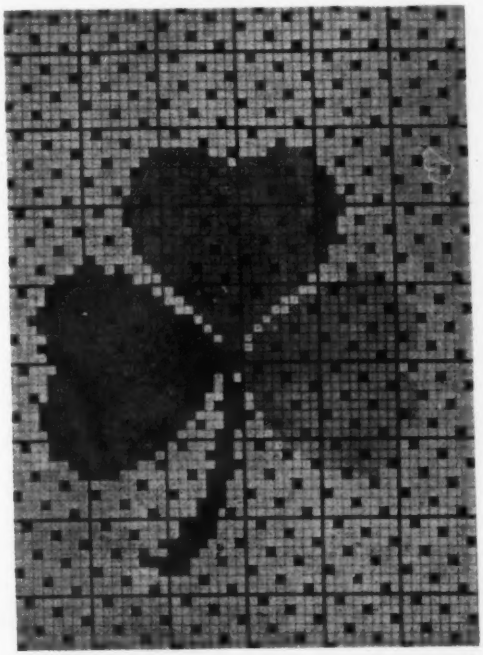


FIG. 1.

enlarged scale. The drafting of the design is a slow, laborious process and requires the services of experienced draftsmen for ordinary patterns. For more elaborate figures, such as a portrait for example, artistic talent is required, and because of the labor envolved it is practically impossible to get an exact reproduction of the features. Benno Borzykowski, the manager of the Photochemie-Gesellschaft at Berlin, has recently patented a photographic process for making jacquard patterns. His success has been due to the fact that in addition to being a weaver, he also possessed a practical knowledge of photography. This process makes it possible to produce accurately on design paper complicated patterns, portraits and paintings in the space of a few hours. Any weaver who has a knowledge of photography can use the Borzyskowski process. The intersecting lines are first printed on the design paper which is then coated with a preparation sensitive to light. The pattern is thrown on the sensitized paper. The intersecting lines are visible through the sensitized coating. The cards are then cut to correspond with the photographic draft and the necessary ground and figure weaves. The process is carried on as follows:

1. Patterns with the same weave in both ground and figure. For example, a 5-leaf warp satin for the ground and a 5-leaf filling satin for the figure. The original pattern is first drawn in black or any other contrasting shade on white paper. The sheet is stretched on a frame and a photograph of it made in the desired size on a dry plate, either by daylight or artificial light. For a 600 jacquard machine a plate about 5 by 6 is required. The operation requires from a few minutes to half an hour, the time varying with the skill of the operative, and costs 5 to 6 cents. The plate is developed, fixed, washed and dried, a special preparation called "radium developer" being used. The negative is placed in an enlarging apparatus, adapted for electric, oil, spirit or gas light. A sheet of ordinary design paper of the right size and gauge is placed on the wall or on a frame in a dark room. By means of a lamp the pattern is thrown on the design paper, focused and adjusted to the desired position and size. A sheet of especially sensitized design paper is now placed over the other sheet and the design thrown on the sensitized sheet from the enlarging apparatus, the exposure lasting for two to ten seconds. The paper is so printed and prepared that

after exposure and developing the pattern appears in a distinct black. The desired ground and figure weaves are shown in green on the intersecting warp and filling lines of the design paper. As shown at Fig. 1, the ground and figure weave is an 8-leaf

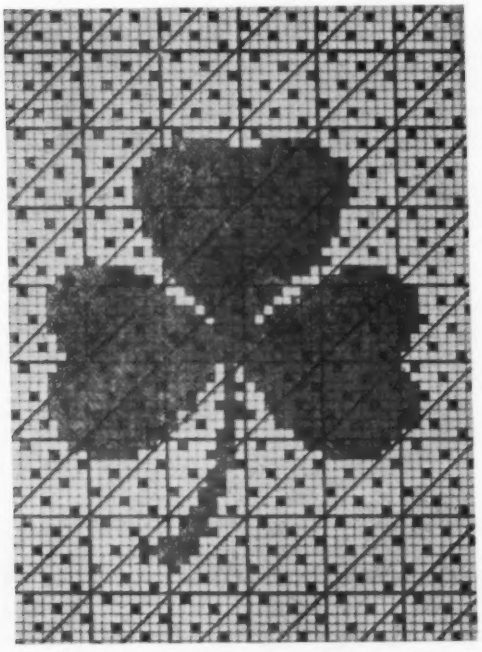


FIG. 2.

satin running from left to right, the card being cut as follows:

Ground, green squares cut.

Figure, green squares uncut.

2. Patterns with separate weaves for ground and figure. This is illustrated at Fig. 2, in which the ground is an 8-leaf warp satin and the figure an 8-leaf filling satin. The cards are cut as follows:

Ground, green squares cut.

Figure, green diagonal lines uncut.

3. Patterns with one weave for the ground and several weaves for the figure. These patterns are made in various ways. Fig. 3 shows a pattern with an 8-leaf warp satin in the ground, an 8-leaf filling satin for one leaf, a 4-leaf warp twill for the second leaf and an 8-leaf filling satin for the third leaf. As three weaves are to be used for the figure, one leaf is sketched with blue, the second with red and the third with yellow. The pattern is photographed as already explained, the three colors being shown in different shades. A specially sensitized plate is used to get this result. The effect is shown rather imperfectly in the half-tone at Fig. 3. The detail comes out very clear and distinct in the photographic pattern. The cards are cut from this design as follows:

For the ground the green squares are cut.

For the light grey figure the green diagonal lines are uncut.

For the dark grey figure the green dots are cut.

For the black figure the green squares are uncut.

If it is not practicable to make the original sketch in as many colors as are desired for the different weaves, a one-color sketch may be used. In that case the different parts of the pattern on the sensitized plate

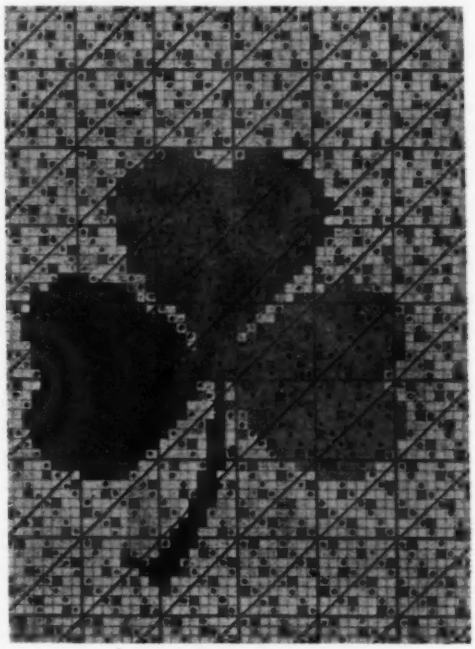


FIG. 3.

are exposed for different periods of time by the use of a stencil.

For patterns requiring more weaves than are shown in Fig. 3, special design papers are used giving the desired combinations of

weaves for the ground and figure. Effects with woven spots in the pattern are photographed by special exposure of the plates. The card cutting is facilitated because the different weaves are distinguished not only by distinct marks on the design paper, but also by the especially contrasting shades of the photograph.

Another advantage of the Borzykowski process is that without any change, cards can be cut from the same pattern, either for a fabric with one warp and one filling or for a fabric with two or more kinds of yarn in warp or filling. As the different weaves are sketched over the entire surface of the design paper, it is possible to transpose them in any desired part of the design to meet special requirements of light and shade.

Fig. 4 shows the photograph of Kaiser William developed by the Borzykowski process. The cost of this process is from 50 to 70 per cent. of the cost of the cheapest method heretofore in use.

FIG. 4.

The High School of Commerce at Lyon gives a course of instruction in the silk business, which includes all branches of the industry from raising the worm, making the designs, and weaving the silk, to putting it on the market.

PLAN OF A COTTON WEAVING MILL.

The accompanying drawing shows the plan of a 356 loom cotton weaving mill built at Reichenau, Germany. Adjacent to the main building, which is rectangular and one story throughout, are the repair shop, boiler and power houses, and the sizing room. The various rooms and machinery have been arranged not only to facilitate the handling of the material in process, but also to help the overseers and superintendent to keep the various departments under constant supervision.

Entry to the mill is gained by a number of doors which permit of easy exit in case of fire or other accident. The arrangement of the departments is as follows: The yarn is stored in the room, D, which is also used for the storage of cloth. The yarn is taken to the room, B, for delivery to the mill; the filling being delivered on one side and the warp on the other. After the yarn has been weighed and a record made of the weights, the filling yarn is taken to the weave room; the warp yarn through the hall-way, A, to the room, E, adjoining the spooling and warping department, E^1. In this room are two 200-spindle spoolers.

The spoolers are placed in the frame, b, and beamed on the three machines, a, which are equipped with automatic stop motions. The rest of the room is used for drawing, twisting-in and the storage of harness, beams, etc.

The beams from machines, a, are taken to the sizing room, F, where the warps are sized, dried and rebeamed. The beams are now carried back to the room, E, where the warps are twisted or drawn in and reeded for the looms.

In the weave room, L, are 356 looms of medium width. A wide passageway runs across the room dividing the looms into 8-loom and 10-loom rows.

The toilet rooms are located at the end of this alleyway, as shown in plan. The arrangement of the mill enables it to be easily enlarged by an extension sideways. The space between the posts are 18 ft., 3 in., by 11 ft., 8 in., which enables the floor space to be utilized to good advantage.

At the side of the weave is the beltway, K, a cross section of which is shown at Fig. 5. The beltway is 6 ft., 6 in. wide and 24 ft., 6 in. high, extending above the level of the weave room ceiling. A platform is built 9 ft. above the floor, making the pulleys and bearings easily accessible. The space below the platform is used for storage.

The passageways from the weave room to the repair shop and engine room are enclosed so as to prevent any access to the beltway.

The engine room, H, is located between the repair shop, G; the boiler house, I, accommodates a 250 h. p. steam engine with one high pressure cylinder. The power is transmitted by ten 2-inch ropes to the main shaft, e, one end of which rests on solid masonry in the engine room. The machines in the repair shop, G, are driven from an extension of one of the weave room shafts. The boiler house, I, contains two water tube boilers. The construction of the roof of the boiler house is shown at Figs. 4, 5 and 6. The offices, C, C, are located near the main entry to the mill.—Uhlands Technische Rundschau.

Fulling Fancy Flannel.

Editor Textile World Record:

We are having trouble in fulling a 5 oz. fancy flannel. After fulling the cloth is creased and the selvage turns over or doubles up. We are using a good fulling soap of our own manufacture, and full the flannel for 2 1/2 to 3 hours.

Amanda (964).

If our correspondent is not already doing so, we would suggest tacking the goods, that is, sewing the selvages loosely together so as to prevent rolling during the fulling process. There are two methods of tacking. One consists in bringing the opposite selvages of a piece together and sewing them by long stitches with a continuous length of twine. The other consists in knotting the selvages at intervals of say 18 to 24 inches.

It might be possible to remedy the trouble by fulling the goods more quickly. The 3 hours they are now running is a long time for such goods and it would seem as if the felt in the fabric could be obtained in less time.

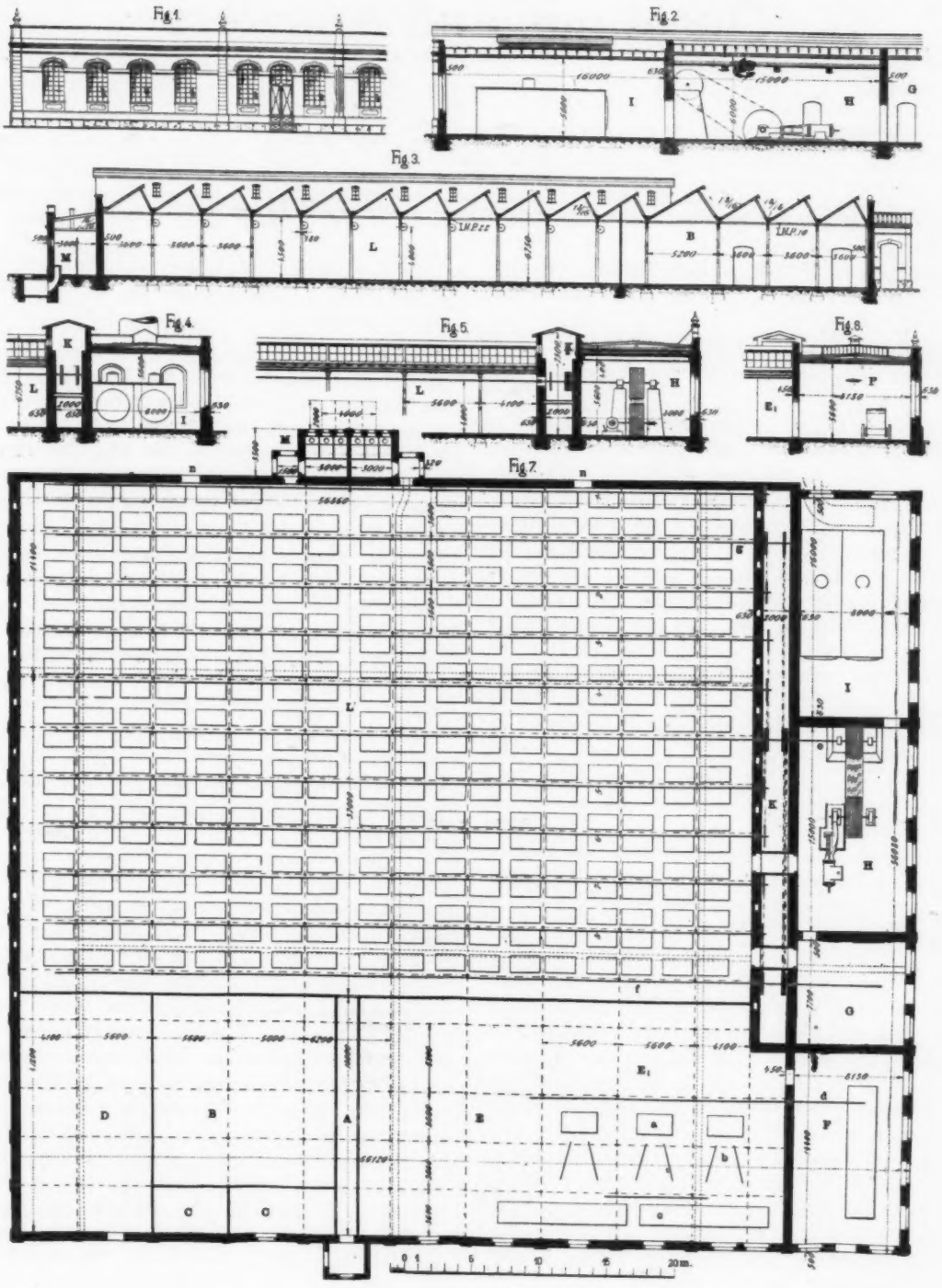


Fig.1.
Fig.2.
Fig.3.
Fig.4.
Fig.5.
Fig.6.
Fig.7.
0 1 5 10 15 20m.

Questions and Answers

Under this head we undertake to answer, free of charge, to the best of our ability, any pertinent inquiry pertaining to textile matters received from any regular subscriber to the TEXTILE WORLD RECORD. Questions should be stated as briefly and concisely as possible. Inquiries pertaining to textile processes, machinery, improvements, methods of management, the markets, etc., are especially invited, as well as any legitimate discussion on the views expressed. All inquiries must be accompanied by the name of the person inquiring ,not for publication, but as an evidence of good faith.

For reply to questions that are not of general interest to readers of textile journals, such as those relating to the composition of yarns, analysis of fabrics, etc., we will charge the enquirer with the cost of the investigation.

Streaks in Knit Goods.

Editor Textile World Record:

We would like to know the cause of the streaks in the sample enclosed. This cloth after knitting is bleached and dyed and the streaks still show, which causes it to be classed as seconds. We use 13s mule spun cotton yarn made of this crop, which the spinners say is of good quality. The cloth was made on a 36-gauge machine.

Adirondack (943).

The sample sent with this inquiry was a tubular fabric with dark transverse streaks about 1/16 inch wide and appearing at regular intervals of about 1/4 inch. The inquiry and sample were submitted to a number of our correspondents, who sent us the following replies:

After a thorough examination of the sample I have come to the conclusion that the trouble is in the yarn; that is to say in the cotton stock from which the yarn is spun. The fact that the streaks show after being bleached and dyed helps to prove my conclusion.

From the sample it appears that the machine has eight feeds, and that two of these feeds have yarn on them which is not as white as on the other six.

Either carded yarn is being used from a different mill on these two feeds which show the streaks, or if the yarn is all from the same mill, then the spinner is using a lower grade of cotton in making it.

Take for example the difference between combed and carded yarn. The former is much whiter than the latter, and if the cloth is bleached and dyed from these, the combed yarn will be whiter than the carded yarn. If both are dyed together the combed yarn will be lighter than the carded.

We often have different shades of white carded yarns coming from different spinners. When using them for cloth that is to be dyed, we are obliged to keep them separate, as we found that the lightest shade of yarn required more dye. Lafayette.

The streaks in the piece of knitted fabric are probably caused by yarn of different qualities or shades being run in on the machine at the same time. I have learned by experience that two different kinds of yarn may appear near enough alike on the cop or cone to be put together, but when they are knit together, the difference in shade is noticeable in the cloth. Some think that even though a piece of cloth is not all the same shade that if it is bleached it will come out the same shade, but it will not. If there is a difference at the start a difference will appear after bleaching, though perhaps not quite as noticeable.

The only remedy for the trouble is to run yarn of the same quality and shade. The yarn is probably bought from two different mills, or the knitter may be working off some odd lots. Amazon.

After due examination of the sample received I find that there has been two different kinds of yarn used, the dark streak being caused by yarn of a darker shade being mixed either at the knitting mill or the spinning mill. I should judge that the yarn causing the streak is either hosiery or warp twist while the balance is underwear twist. If the knitters are using yarns of a different twist they will probably find that some of the operators are getting the yarns mixed, but on the other hand, if they are using only one kind of yarn they will have to look to the spinners to remedy the trouble. These streaks could not possibly be caused by the knitting machine. Madison.

Upon examining the sample of knit goods,

I find that the trouble lies in the yarn. It is full of what is known as spindle tops, and uneven twist, caused by uneven spindle bands.

The trouble may also be caused by mixing yarn of different twist.

Yarns to be dyed should be even and free from spindle tops; then good results are assured. Uneven yarn will cause light and heavy stitches to be made in the garment. The soft stitch being loose and thin will take the dye more easily, while it takes longer to penetrate the harder thread, thus causing streaks in the goods. Lynn.

If the machines have adjustable heads it would be necessary to see that the heads are adjusted to run as true as possible, otherwise the dial will be thrown closer to the eye in one space than in another, making a long stitch where it hung away from the eye, and a short stitch where it runs close to the cylinder. This would cause streaks. It would also make it impossible for drawing back or cast-off cams to be all set alike. Where a long stitch is made, it is necessary to draw back further or cast off harder to make the cloth look clear. With a short stitch it is impossible to cast off or draw back as hard.

The head and dial should be as nearly level with the cylinder as possible, and not high on one side and low on the other. In such a case the high side would make a long stitch and the low one a short stitch. The result would be uneven and streaked cloth. These are the causes of and remedies for the trouble on machines with adjustable heads, where the cylinder and dial do not revolve but where the head and cylinder sections do revolve.

On a machine with stationary head the dial and cylinder revolve and the head and cylinder sections are stationary. On these machines it is necessary to see that dial and cylinder run as true as possible; also to see that dial hangs in its proper place and not more on one side than on the other of the cylinder, or lower on one side than the other, as either of these would cause streaks.

London Smoke.

I think 13s on a 11 cut machine is too coarse to give good results. The yarn in the sample is so uneven that one can feel ridges when drawing the fabric between the fingers. There is quite a marked difference in the shade of the yarn and I have no doubt but that the trouble is caused by mixing two lots on the knitting machine.

Frank M. Robinson.

Referring to the inquiry regarding the cause of streaks in the sample of knit goods submitted, I find the yarn very uneven. The yarn causing the streaks is finer and twisted harder and darker in shade than the other yarn in the cloth. It would be impossible to make the two alike by bleaching and dyeing.

I also find the knitting very bad. The knitter is not drawing an even stitch on his machine. Evidently two lots of yarn have been mixed together and the remedy for the trouble is so obvious that nothing more need be said about it. Barton.

Artificial Silk.

Editor Textile World Record:

I am interested in the manufacture of braids used for the trimming of women's garments, these braids being made mainly of artificial silk. The artificial product is greatly affected by humidity and if it reaches a certain point the manufacturer is compelled to stop his machines until drier weather sets in. Is there any way in which this fault of artificial silk can be overcome?

Felix (940).

It is the custom among manufacturers of braids of this class to stop their machinery whenever the weather is very damp, and there has not, up to this time, been any remedy offered. Artificial silk is a fiber which is very hygroscopic. Whenever the moisture in the atmosphere gets beyond a certain point the water is absorbed by the fiber and the result is that the threads lose a large percentage of their resiliency and the braid becomes narrow. The threads also lose in strength and the machines have to be stopped frequently. The only remedy would seem to be to remove the moisture from the atmosphere and I know of at least one attempt that has been made on a large scale to accomplish this with an apparatus similar to the humidifiers used in spinning mills for

supplying the air with moisture. The air was circulated by means of ventilators and ducts, and an attempt was made to absorb the surplus amount of water in the air by means of hygroscopic chemicals.

Delta.

Graft.

Editor Textile World Record:

Do you not think it would be well to take up the subject of graft so prevalent in the trade? I am sure all manufacturers would loyally support you in such action. St. Catherines (939).

We always find satisfaction in exposing graft and other abuses in the trade. "St. Catherines" inquiry is very indefinite, but we presume it refers to the practice of those selling supplies to mills paying employes of the mills for their real or supposed influence in making purchases. We believe this practice is carried on far less than is generally supposed and, as stated in a former issue of this journal, we also believe that the mill owner is as much to blame for its occurrence as either the sellers of the goods or the employes. It is the mill owners' duty to organize a system that will make graft of this kind impossible. An ounce of prevention is worth a pound of cure.

One Dip Logwood Black.

Editor Textile World Record:

Kindly give us the formula for dyeing grey sheeting a logwood black in a single bath. Jersey (954).

A recipe for dyeing grey sheetings black in one dip is as follows:

400 lbs. Sheetings.
20 lbs. Cutch Extract.
60 lbs. Logwood Ext. 51°.
10 lbs. Bluestone.
8 lbs. Soda Ash.

Boil up and add the soda ash slowly. Give three or four runs and let lay over night. In the morning chrome with 1 per cent. chrome; wash. This will give a good black.

This sketch gives an idea of a padder on which I run sheetings by the one dip method, that is three dips in one bath.

If it is desired to dye the sheetings in one continuous run, a four box machine is necessary and the following recipe must be used:

1st Box Logwood 10° Tw.
2d Box Logwood 10° Tw.
3d Box Bluestone 4° Tw. at 130° F.
4th Box Chrome 3 1/2° Tw. at 70° F.

Stock liquors for the above are made as follows:

40 gals. Logwood 51°.
5 gals. Quericitron bark.
10 lbs. Sal. soda.
6 lbs. Cocoanut oil.

Make up with water to stand 10° Tw.

If very cheap blacks are wanted, they can be dyed in the starch mangle; that is, the dyeing and starching can be done together. The logwood solution can be added direct to starch, together with a small amount of acetate of iron; give two runs and dry.

Dunloe.

A Tuck Stitch.

Editor Textile World Record:

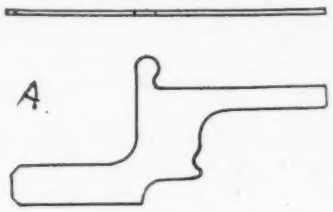
Kindly inform me what is a tuck stitch.

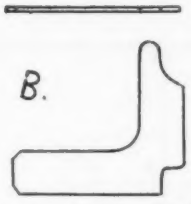
Stephen (957).

A tuck stitch is a stitch that is held on the needle for one or more revolutions and then cast off. Making the welt on cuff machines illustrates one way of making a tuck stitch on the dial needles where the yarn is held on the needle for one revolution. Another way of making a tuck stitch consists in holding the yarn on the needle for two or more revolutions and then casting off. As shown in the illustration, A is the working jack and B the blind jack. On the bed of the machine is a ring which presses on the arm of the working jacks, lifting them up so that they do not cast off the stitch for one revolution; on the next revolution they are released and drop back into place so as to cast off the stitch. A working jack and a blind jack alternate, so that after the required length of tuck stitches is made, the machine goes on to plain work. This tuck stitch work is made for the welt, and can also be made for the calf of the stocking.

Another method of making a tuck stitch is on the circular spring needle machine, which consists in using a cut presser which

is made to suit the gauge desired. The presser is cut so that every other needle on the first feed does not press off, and on the second it is pressed off. The needle which





presses off the first feed does not press off the second feed, and the stitches that are not pressed off the first feed are the tuck stitches. Hawley.

Sizing for Balbriggan Yarn.

Editor Textile World Record:

I would like a recipe for making size for balbriggan yarn. I am running No. 22 frame spun yarn on a 24 gauge Tompkins machine. The size I am using does not give satisfactory results. Parnell (938).

I have found that the following recipe makes a very good size for balbriggan yarn:

2 lbs. soap,
1½ lbs. oleine or spindle oil,
Water to make 3 quarts.
Boil until thoroughly mixed.

This solution of soft soap, oil and water is also used in winding harsh yarns to make them run easier in knitting. The size is put on the yarn during the process of winding by using a trough with a tin roller about three inches in diameter, which is revolved slowly while the yarn passes over it and is wound on the bobbin. The yarn is sized by passing over the surface of the roller, which is coated with the solution.

I have knit large quantities of balbriggan yarn on a 24-gauge Tompkins machine without using any size at all, but some knitters prefer to have the yarn sized, thinking it runs better in winding. For my part I always knit without a size unless the proprietors wished it to be used. Noel Howe.

The size I use for balbriggan yarn is made of 20 pounds of chip soap and 15 pounds of borax mixed with enough water to dissolve it thoroughly. I use an oil barrel for boiling the solution and stir it well during the process, then add enough water to make the barrel two-thirds full. To 5 quarts of this soap and borax solution I add 4 or 5 quarts of olive oil and 5 pails of water, boil it well and apply to the yarn. Barton.

Reed Marks in Silk Ribbon.

Editor Textile World Record:

I am enclosing sample of ribbon with wavy lines in warp. How can these marks be prevented? The ribbon is made on a jacquard loom. Warps are of 3 thread, 2 1/2 dram Organzine silk; 3 ends in a dent, 72 dents per inch; filling, 8 thread 7 dram tram silk. Leonhard (956).

The sample seems to be too closely marked to be caused by the reed. The streaks may have been caused by unbalanced warps. If the ribbon is made on two warps run over two glass rods, being entered end and end, or two and two, marks such as are seen in the sample might be easily made. The best method is to enter the warps half and half, or in other words, enter one warp into the first half of the harness, then enter the second in the remainder. If care is taken to weigh both warps and have them alike, passing over one glass bar only back of the harness, the trouble would be overcome.
David Denier.

The striped appearance of this ribbon is not caused by the reed; it is too regular for that. It may have been caused either by two different lots or qualities of silk or two different dye lots having been warped together, or by irregular tension on the threads in the warping. It could also have been caused by the jacquard harness being unevenly built so that some of the rows of needles are higher than others.
Velours.

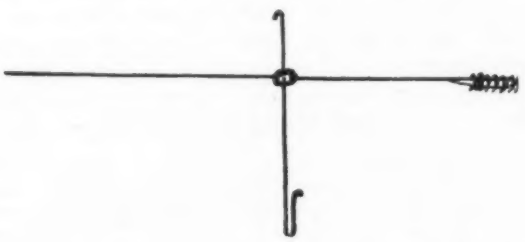
Replacing Jacquard Hooks.

Editor Textile World Record:

Kindly inform me the best and quickest way of taking a hook or needle from the centre of a double lift 600-needle jacquard machine and then replacing it. Lloyd (955).

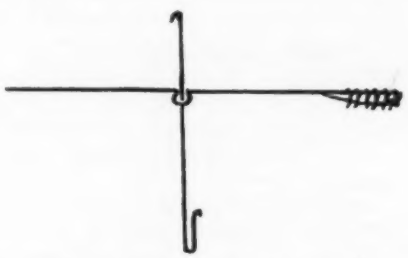
In taking a hook or needle out of a jacquard machine it is necessary in machines using needles which have holes through which hooks pass, to take from the top every needle in the row in which it is desired to change either hook or needle, down to the point affected, replacing, of course, in a reverse manner. In machines using needles with an offset instead of a hole or ring, many loom fixers use a long bladed screen driver or a quarter inch rod, about 18 inches long, with a ring in one end and the other end flattened. By inserting this rod above the machine into the row of needles in which a change is necessary, and using the flattened end as a lever, an opening can be made through which a hook or needle can be withdrawn or replaced. Removing or returning hooks or needles is like the royal road to learning, there are no short cuts.

David Denier.



If the needle is made with a full or closed eye it is necessary to remove all the hooks and needles in the row until the one to be removed is reached. If the needles are made with a half or open eye, it is only necessary to detach the defective one from the needle spring and then turn the needle to the right and draw it out. The accompanying illustrations explain the idea. It is hardly necessary to state that any fixer who has worked with both styles of needles will appreciate the advantage of the open eye.

Velours.



Equipment for Bleaching Knit Goods.

Editor Textile World Record:

Please advise me what equipment is necessary for bleaching cotton underwear in the roll; also the proper treatment to get an even white bleach by the lime method; also the best way to dry the rolls after bleaching, and what machines are the best for this purpose, that is, for the straight cloth as well as for the shaped ladies' vests, drawers and union suits? Peter (965).

The appliance required for bleaching knit goods in the roll depends on the amount to be handled. For 2,000 or 3,000 pounds a day it would be necessary to have a boiling kier, a wood lime vat cemented on the inside, so that the liquor can be pumped out and into the vat. The goods can be washed and scoured in the same vat. It is necessary to have a machine for soaping and bluing the goods. This machine should have 3 rolls on the bottom and 2 rolls on the top, with 2 squeeze rolls. It is necessary to have an extractor and a set of hot air blowers. The blowers for drying the goods can be fitted up so that the piece will be automatically wound on the roll. If desired the goods can drop into a basket or other receptacle.

If the production is less than 1,000 pounds per day I would advise using a regular cloth machine for boiling off in a solution of 2 per cent. of caustic soda and soap. Wash in cold water. Wash, scour and soap in the boiling machine. I have handled goods in this way and obtained the same results as if they had been boiled in a kier.

Winthrop.

Changing Ring Doffers on Woolen Cards.

Editor Textile World Record:

We have four sets of 48-inch woolen cards with two doffers. We are taking off 36 ends of roving. 18 ends on each spool and two waste ends. We

want to take off 54 ends and use 3 spools. The size of the roving is about 5/8 run, made from horse blanket stock. What changes will be necessary to get the best results?

Hampshire (967).

I do not approve of the proposed change as the new rings will be too narrow for the work. To make this change, however, it will be necessary to have a new ring doffer for each card, brackets for same, new condensers arranged for the new doffers and new spool stands. If the workers cannot be moved closer together one of them will have to be taken out to set the fancy higher up on the card to make room for doffers. New rings must be provided for all doffers; top and center doffer rings same size; bottom, 1/8 inch wider. Top rings, 12/16 inch; center, 13/16 inch; bottom rings, 14/16 inch; two waste ends, 1 1/2 inch each. If the entire cylinder surface is not to be covered use 12/16 inch on top and center doffers; 14/16 inch on bottom.

For increased production I prefer a different arrangement, considering the size of the yarn and kind of stock to be carded. Let us take for illustration a card with two 9-inch doffers delivering 18 ends each, running 20 revolutions per minute on 1 run work. What will be the production in 10 hours? The circumference of the rings is 30 inches; $18 \times 30 = 540$ inches or 15 yards at each revolution. $20 \times 15 = 300$ yards per minute. $300 \times 60 = 18{,}000$ yards per hour or 180,000 yards per day (10 hours) for each doffer, or 360,000 yards from the two doffers. $360{,}000 \div 1{,}600 = 225$ runs or pounds of 1 run yarn.

Let us now take a card with 12-inch doffers, running 22 revolutions per minute. This can be done as the point of contact between cylinder and doffers is greater, giving more chance to lay the stock. The circumference of the ring is 40 inches, $18 \times 40 = 720$ inches, or 20 yards. $22 \times 20 = 440$ yards per minute. $440 \times 60 = 26{,}400$ yards per hour, or 264,000 yards per day (10 hours) for each doffer, or 528,000 yards from the card in 10 hours. $528{,}000 \div 1{,}600 = 330$ runs or pounds of 1-run yarn. This is a gain of about 32 per cent. and can be obtained with good results.

Let us now take a 3-doffer card with the narrow rings running under the same conditions as the others. One 9-inch doffer will deliver 180,000 yards in 10 hours; 3 doffers turn off 540,000 yards. $540{,}000 \div 1{,}600 = 337\ 1/2$ runs or pounds of 1-run yarn. This is about the same as from the card with two 12-inch doffers with everything in favor of the two doffer cards. Changing over to the 12-inch doffers costs less. The size of the rings remains the same and we have a card that will give results. S. V. B.

Number of Cotton Spindles in the World.

Editor Textile World Record:

I would like to have you publish a list showing the number of cotton spindles in each country and the total for the world. Winthrop (963).

The following statistics of cotton spindles and consumption of cotton throughout the world have recently been complied by the United States Bureau of the Census:

	Cotton spindles (number)	Mill consumption (bales)
United States:		
Cotton Growing States,	9,527,964	2,410,993
All other States,	16,847,227	2,573,943
Europe:		
United Kingdom,	50,679,641	4,067,000
Germany,	9,339,448	1,688,000
France,	6,800,000	951,000
Russia,	6,500,000	1,517,000
Austria-Hungary,	3,616,434	711,000
Italy,	3,500,000	893,000
Spain,	1,850,000	341,000
Switzerland,	1,484,450	94,000
Belgium,	1,140,000	196,000
Portugal,	420,000	102,000
Sweden,	415,000	97,000
Netherlands,	395,678	74,000
Norway,	71,776	12,000
Denmark,	59,044	25,000
All other Europe,	185,000	80,000
British India,	5,279,595	1,691,872
Japan,	1,483,497	933,633
China,	750,000	375,000
Brazil,	1,300,000	275,000
Mexico,	688,217	200,000
Canada,	800,000	125,000
Other countries,	200,000	60,000
Total,	123,332,971	19,493,441

KNITTING DEPARTMENT.

For Knitting Mill Machinery, Equipment and Supplies, see pages 235 to 253. Also Buyers' Index.

THE KNIT GOODS SITUATION.

The condition of affairs in the primary market of the knit underwear end at the present time is described by one writer by the ancient line as "confusion worse confounded." Buyers and sellers appear to be playing the game of "hide and go seek" in their efforts to do business without the one making some concession to the other.

It is known that a great many buyers have been in the market and returned home without placing more than 25 per cent. of their normal business and manufacturers are divided in their opinions as to the advisability of sending agents out to urge the placing of more business at the present time or of waiting until retailers show some inclination to place orders which will, of course, force the jobbers into the market again.

Some travelers went West last month, but met with such poor success that they cut the trip short and hastened back to New York, finding they could accomplish more by paying better attention to the smaller buyers who were still there looking at fall lines, and by letting the larger Western buyers alone at that time.

In regard to the price schedules, there have been few reductions made since our last issue. Lines of fleeces and ribs at $3.75 and so-called limit prices are still being held firmly, but there are any number of lines to be had at any old price one might wish to pay, from $3.12 1/2 up. Some very sightly merchandise can be had at $3.50, but a careful comparison with the $3.75 line will show the buyer is only getting what he pays for at whatever price he pays.

Ladies' six pound carded yarn New York State made goods are still being held at $2.00 in a general way for fall delivery, but it is understood that considerable business has been placed by some of the larger buyers at $1.95, May 1st; this, for goods made of fairly clean yarn, mercerized trimmed, pearl buttons and with side open pants. The number of makers of this class of goods has diminished considerably during the past two years, so that today, a buyer has only a few sources of supply to look to.

E. M. Townsend & Co. have a line of Southern made ribbed goods on which they accept orders at $1.97 1/2 for fall delivery. These goods are made in Montezuma, Georgia, and the samples look very well.

The Ontario Knitting Co. have discontinued making the 25 cent ribbed goods and this means a curtailment of the production of this class of merchandise of about 6000 cases.

Robert Mackinnon & Co. have created considerable excitement by selling a garment, weighing 7 pounds on size 6 at $2.00. This is the same character of goods, they made for several years, but which were out of the market last season. This garment is made from waste yarns, but on account of the extra pound in weight, we understand that a large number of orders have been placed on the line.

J. C. Roulette & Co. have gone into the manufacture of ladies' heavy weight cotton ribbed goods again, and are showing some excellent values in both fine and tuck stitches at $3.50, $3.62 1/2 and $3.75. This concern had a good reputation on this class of merchandise some years ago, but discontinued making heavy weights, owing to the great demand for their light weight goods. They have increased the production of their mill and will take up the heavy weight business again.

Both the Greenwich, N. Y., manufacturers, namely, the Jesse V. Palmer Co. and the Greenwich Knitting Co. are holding firm at $2.00 net for six pound and $2.20 for seven pound carded ribbed goods. The Greenwich Knitting Co. have, however, withdrawn their samples from sale for the present, until conditions become more settled.

The Regal Textile Co. are showing a very

sightly fine stitch carded yarn garment at $3.25 in peeler only. They also show a peeler and white line, weighing eight pounds, which they claim to be made of semi-combed yarn at $3.50, and a full combed garment of the same weight at $3.62 1/2. We understand that the two lower numbers have been taken very freely by some of the large Chicago jobbers.

Flavell Bros. show a line of one and one rib carded bleached goods at $3.5c, and the Queen City Knitting Mills of Elmira have a similar garment at $3.55.

The Lewis Jones Knitting Co. are showing a bleached line at $3.25. This, however, is made in tuck stitch which in some localities is not taken as freely as the one and one rib.

The Avalon, Alliance, Latosca and Campbell Knitting Mills remain firm with their eight pound lines at $3.75, and while they all admit they have not booked all the business they need, they say the more discriminating buyers are placing orders for fairly good quantities.

The Utica Knitting Co. have improved the Vellastic ladies' ribbed goods by making them in finer gauge and of a specially prepared yarn which looks cleaner than the ordinary carded product, and they have adopted a shell trimming for the neck of the ladies' vests and have discontinued using tapes. This concern is also putting on the market a new garment for children, called the Waist-Shirt, shown in the illustration.

THE NEW WAIST-SHIRT.

It is a ribbed fleeced straight vest fitted with tapes, buttons and pin tubes, the same as the knit waist that is now so popular for children from two to twelve years of age.

The Nazareth Waist Co. have also introduced a combination suit fitted with tapes, tubes and buttons and put it on the market under the name of the Nazareth Waist Union Suit, and this style of a garment will undoubtedly prove to be popular, as it becomes better known.

Retail departments visited during the past month all report an increasing trade on all lines of combination suits and there has developed a good demand for medium un-

fleeced fine stitch cotton suits for men. In ladies' suits there are still some demands for those open across the chest, but that those opening down the front have the call is evidenced by the fact that the Oneita Knitting Co., the originators of the across cut style, now state that "the Oneita that buttons down the front is the one that is wanted."

HOSIERY.

There is a moderate trade on fall lines of hosiery, particularly among the smaller jobbers. Buyers for the larger organizations have operated only to a very limited extent so far, but are keeping in touch with the market. If only half a business is obtained from the retail, they will be obliged to begin soon to operate more liberally to take care of their trade. Prices on fall lines are not being reduced any in order to secure business, in fact, manufacturers say it is impossible to name any lower prices in the face of the raw material conditions existing today and there are no indications of any changes for the better. Advances are being asked and paid on a number of lines of full fashioned heavy weight and fleece lined goods.

Deliveries of spring lines are generally satisfactory, except on tans which are somewhat slow. Retailers began last month to call for tans and to request earlier shipments than those originally ordered.

Chemnitz manufacturers have been letting out some stock lots at sharp prices, notably a fairly good quality of split-foot goods at M4.40, which is better value than has been obtainable during the past two years or so.

Some Eastern jobbers and manufacturer's agents have been circularizing foreign cotton and lisle hose at low prices in an effort to reduce the stock.

A few novelties shown are mostly in tan and champagne grounds. The new colors in plain goods are apricot shades and there is also considerable call for Copenhagen blue and russet tans.

Embroidered goods are holding their popularity well and black and tan laces have sold freely. Plaids are not being taken at all, and it looks as though they had taken a decided drop.

SWEATERS.

This branch of the knit goods trade is about the only one on which a satisfactory business is being done.

Early in the season there was a tendency toward straight mannish-looking sweater coats for ladies, but the trade has not taken them very freely, except in the misses' lines, and for ladies, the fancy stitch fitted garments have been selected principally.

A tremendous business has been done lately on a cotton sweater coat for men, costing about $4.75 per dozen at the mill. These have been shipped by express every day, as fast as they could be turned out. Some days it was necessary for the express company to furnish two cars for these shipments.

Oxford grey is the only color on which there is any great demand. The grey coats with cardinal and navy bands have also sold fairly well. These garments are quite popular in a range of prices up to $45 per dozen.

A NEW NECKTIE MACHINE.

The great popularity of the knitted necktie has led to the development and introduction of a special knitting machine for this class of work, which is being put on the market by James Taylor, 121 Arch St., Philadelphia, Pa.

The machine will knit either cotton yarn, silk or wood fiber silk, and will produce a variety of fancy or tucked stitches, also plain tubular webbing either with or without stripes or crossbars in two colors.

The action of the machine is entirely automatic not only for striping but for narrowing for the neckband and measuring lengths of the neckband and apron of the tie.

The production is about ten dozen neckties per day of ten hours, depending somewhat of course on the character of the work. As the machine is simple, one skilled operator can attend ten or twelve machines. The cams and bobbins are stationary while the cylinder and needles revolve. They are made in any gauge or width desired.

In order to supply the immediate demand promptly and at a low cost, the housing or frame of the old style Nye & Tredick machines is utilized. These frames are equipped with new heads, new cams, new needle cylinders and striping attachments.

The manufacturer will be pleased to give further information on request.

1908 DIRECTORY OF THE KNITTING TRADE.

The twenty-sixth annual edition of the American Directory of the Knitting Trade in the United States and Canada, compiled by the Textile World Record, has been issued for 1908.

This is about a month earlier than usual, but a special effort has been made to canvass the field promptly, so that the information may be fresh and available for early use in the trade.

This well known publication, familiarly called "the little red book" by the knitting trade, contains:

Full report of every knitting mill in the United States and Canada arranged alphabetically by states and towns, giving capitalization; names of the officers, including superintendent and buyer; kind of goods made; number of knitting machines, whether latch or spring needle; number of sewing machines; whether the mill dyes or bleaches or finishes; kind of power; number employed; selling agent; kind and sizes of yarn bought.

Special copyrighted maps of the mill districts, showing the cities and towns where there are knitting mills. It is indexed so any town may be quickly found.

Carefully classified index of manufacturers according to kind of goods made. All the manufacturers of the same kind of goods are grouped together.

Alphabetical index of manufacturers, giving the page number where full report of mills may be found.

List of dyers, bleachers, finishers, printers, etc., making a specialty of knit goods work.

Manufacturers' selling agents and commission merchants handling knit goods; the name of the person in charge of the knit goods department is given. When a concern is sole agent or special selling agent for certain mills the names of the mills sold for follow the agents' names.

List of jobbers of knit goods, telling the kind of goods handled and the name of the buyer, with the New York address.

Department stores and large retailers handling knit goods, with the names of the knit goods buyer and the address of the New York office.

An index of machinery and supplies used in the manufacture of knit goods, also yarn dealers supplying knitting yarn. Published by the Lord & Nagle Company, 144 Congress St., Boston.

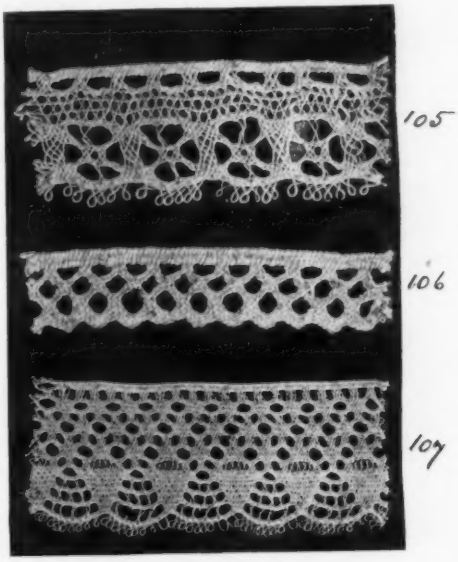
THE MANUFACTURE OF BRAID IN THE UNITED STATES.

BY FERDINAND THUN.

(Continued from February.)

TORCHON LACE MACHINES.

In all the preceding articles I have described different machines for making plain and fancy braids for the dress and millinery trade. With few exceptions, all of the patterns that have been illustrated were solidly braided, while in some instances, open work effects were shown. Most characteristic among these were the patterns illustrated in

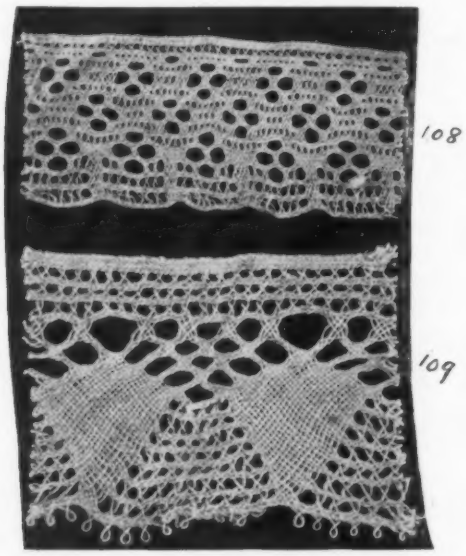


FIGS. 105, 106, 107.

connection with the cross-binding machines, and, indeed, the construction of this machine already shows the underlying principle of the lace braider.

A lace as an ornament or trimming consists of designs formed by the crossing and twisting of threads in such a way that the figure of the lace becomes prominent by the contrasting background which it is calculated to enliven. The making of laces by

hand is very old and probably dates back to the fifteenth century when the art was known in Italy, Spain, Germany and the Netherlands. The process of making hand-made laces consists in twisting and crossing threads on needle cushions in such a way that the yarn-carrying bobbins are manipulated according to the needles stuck into the cushion to mark the pattern. This process of lace making is probably the oldest of all hand processes and is today extensively carried on in some countries. Linen thread is usually employed on account of the great strength of this fiber and its quality to resist the action of the elements. Cotton, woolen



FIGS. 108 AND 109.

and silk thread are also employed, and, in some cases, tinsel and other fancy materials. As the making of laces by hand is an exceedingly slow and tedious process, and requires great skill, this product has always been very high priced, in spite of the fact that the makers of the lace work get very small wages.

The hand process of making these torchon laces conforms very closely to the braiding operation, and it is, therefore, not surprising that in the great development of the braiding machines the problem of producing these laces by machinery should have received attention. The first machines of this kind were built about thirty years ago in Barmen, Germany, and this city has ever since remained the center for the manufacture of machine-made torchon laces. By no other process can so close an imitation of a hand-made lace be produced than is possible on these highly specialized braiding machines. The so-called Nottingham laces or the Plauen laces show their machine-made origin much more closely.

The only disadvantage which the braiding process for making laces has over the weaving process employed on other machines is that only one narrow strip of lace is made at a time, and the quantity of the product produced per day is small compared to the cost of the machine. On the other hand, changes in design can be made very rapidly by putting another set of cards on the jacquard apparatus of the machine, and, while the machines themselves are highly developed and more or less complicated, the running of the machines is comparatively simple, and inexperienced operators can be employed. A replenishing of the bobbins is practically all that is required of the ordinary machine hands, and all the adjusting and setting of the machines can be left to a foreman. One good foreman can look after a hundred or more of these machines, and one operator can ordinarily take care of about twenty.

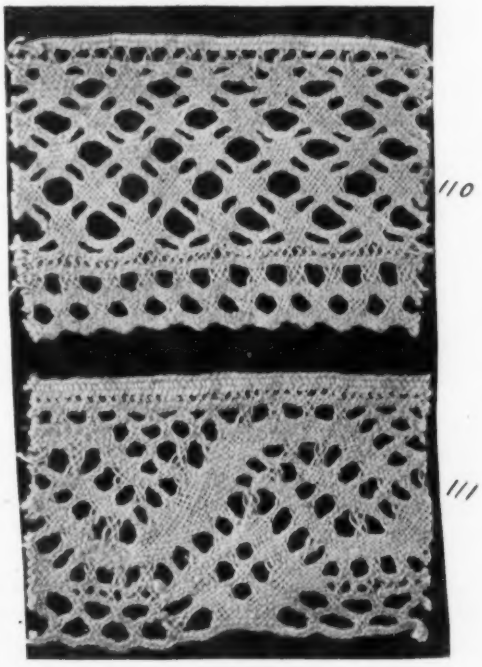
The machines for producing these torchon laces are divided into three classes, according to the number of carriers per line or section of the machine.

Class A. Four-thread lace machines, consisting of a plurality of sectional courses connected by switch controlled pass-over tracks, each sectional course being supplied with four carriers. The product of this machine is called a four-thread lace, and, according to the width of the machine, the lace has as many lines or bars as there are sectional courses.

Class B. Three-thread lace machines, consisting of a plurality of sections with three carriers to each section and provision for passing the carriers from one section to another by means of jacquard controlled switches. The product of these machines is

a lace, the individual bars or strands of which are composed of three threads each.

Class C. Two-thread lace machines, producing a lace with only two threads to each bar or strand. The sections of these machines generally consist of three gears operating two carriers, with switch-controlled connections between each two sections. On some types of these machines only two gears to each section are employed.



FIGS. 110 AND 111.

In order to illustrate the characteristics of the various types of torchon laces, according to the three classes, we call attention to the illustrations.

Fig. 105 is a torchon lace made on an 8-line, 4-thread lace machine, out of ordinary 2-ply cotton yarn. The loop edge on one side is produced by running the carriers over a side track terminal, which is provided with a selvage needle having a wire end extending into the braid former, around which the threads pass and form a loop. The tight twist of the individual thread causes these loops to close and form a figure 8 design. This pattern is a cheap lace, loosely woven, and, consequently, giving a large product.

Fig. 106 shows a 5-line, 4-thread lace pattern of coarse design. In this pattern the straight top bar is made with four braiding

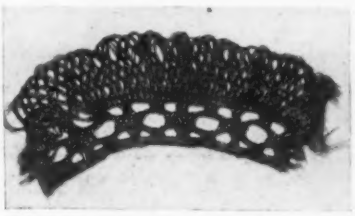
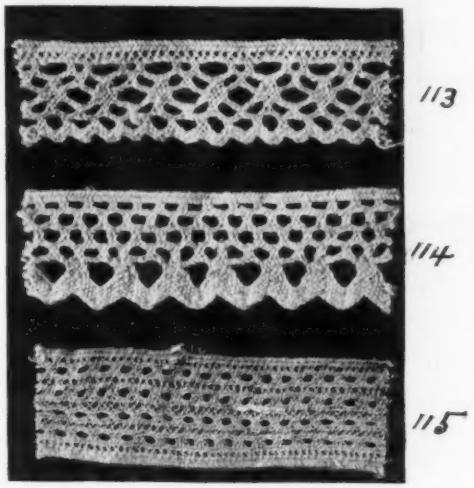


FIG. 112.

carriers only and two heavy warps, resulting in the formation of a soutache. The wide bar at the bottom consists of two lines, eight carriers being employed in forming this. In producing this pattern the switch connections between the fourth and fifth lines always remain open. This pattern is made from 16/2, and the product of a machine is about 72 yards in ten hours.

Fig. 107 shows a 12-line, 4-thread lace of a somewhat more complicated pattern, and made of a finer material. The soutache



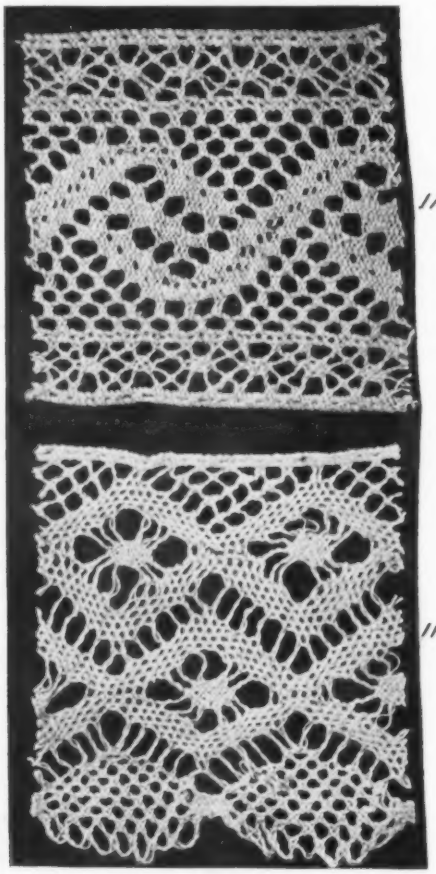
FIGS. 113, 114, 115.

effect at the top bar is also made by the use of warp threads, and the loop edge on the opposite side is produced by means of side-track terminals. The yarn is 2/40 cotton, and the product of a machine is approximately 50 yards in ten hours.

Fig. 108 shows a 14-line, 4-thread lace of a similar pattern as the preceding one, and

made from the same yarn, and with approximately the same production.

Fig. 109 is made on a 16-line, 4-thread lace machine, and is a typical 4-thread lace



FIGS. 116 AND 117.

pattern. The large diamond shaped, solidly braided portion forming the characteristic figure of this lace indicates that machines of this kind produce a regular flat braid of diamond or basket weave when all the switches are open. This pattern is made from 2/24 cotton, and a machine will produce about 8 yards per hour.

Fig. 110 shows a pattern made on an 18-line, 4-thread lace machine. On this pattern the lower two bars represent two lines each, each being made with eight strands. The yarn used is 2/20 cotton, and the production is about 8 yards per hour.

Fig. 111 shows a 16-line, 4-thread lace made of 2/20 cotton. The production of this pattern is about 8 yards per hour.

Fig. 112 shows a black silk lace made on a 6-line, 4-thread lace machine. The material is artificial silk. The lower half of the pattern shows the characteristic features of the 4-thread lace, while the upper half shows a lace edge produced by causing the threads to braid over needles or wires extending into the braid former and spreading the fabric.

Fig. 113 shows an 8-line, 3-thread lace made from 2/20 cotton. The production is about 6 yards per hour.

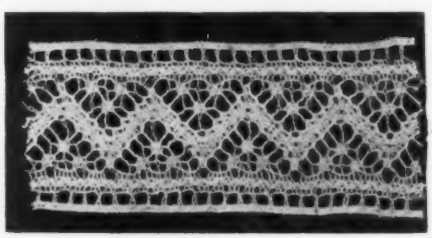


FIG. 118.

Fig. 114 is made on a 10-line, 3-thread lace machine. The yarn used is 2/20 cotton, and the production about 6 yards per hour.

Fig. 115 shows a very tightly woven 3-thread lace, made on a 10-line machine from fine yarn. The production of this pattern is about 2 yards per hour.

Fig. 116 shows a linen lace of characteristic design. It is made on a 30-line, 2-thread lace machine with 60 carriers, and the lace contains 60 threads of linen. This pattern requires a large machine, but is fairly fast-producing. Eight yards per hour is a fair estimate of the production of one machine. Patterns of this kind are called insertions and are largely used as trimmings.

Fig. 117 is a 32-line, 2-thread lace, also made of linen thread. This pattern is somewhat looser woven than the preceding one and can be turned out on one machine at the rate of 10 yards per hour.

Fig. 118 is a cotton 2-thread lace of fine texture. It is made on a 24-line, 2-thread lace machine. The production is 4 yards per hour. The characteristic feature of this de-

sign is the zigzag figure which is accentuated by a heavier thread forming the border thereof.

(To be continued.)

MY EXPERIENCES IN KNITTING MILL.

The accompanying cuts were omitted from Mr. Herington's interesting sketch of his experiences in knitting mills which appeared in our February issue. We insert

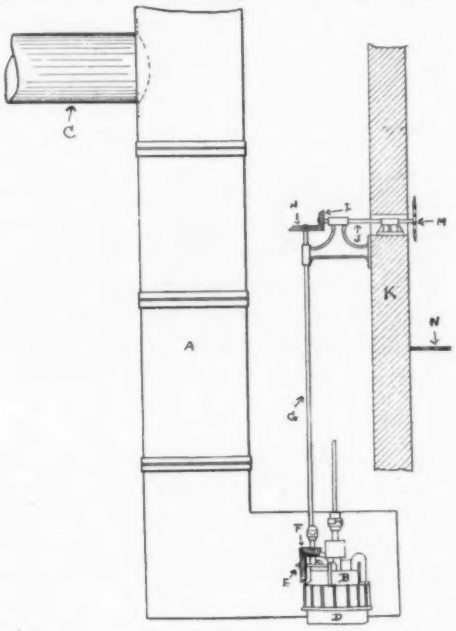


FIG. 1.

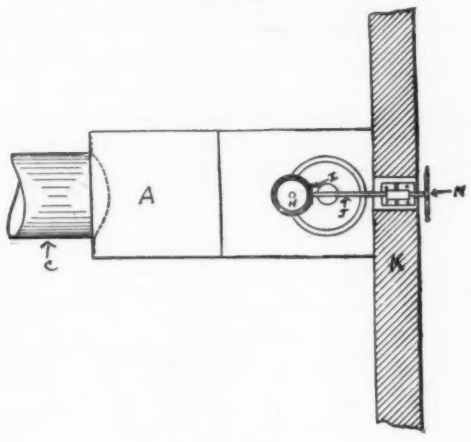


FIG. 2.

them here in order to make the story complete.

STAINS ON KNIT GOODS.

Editor Textile World Record:

Referring to the correspondence on page 601 of your February issue in regard to stains on knit goods, we would appreciate it very much if you would put us in touch with the source of this inquiry, as we think we can supply a product which will do away with any such trouble. We have given a great deal of attention to bleaching and are supplying the leading mills of the United States with our "bleaching assistant." This product, while being of an alkaline nature, is very mild in its action and at the same time has high cleansing properties. It dissolves and holds in solution the vegetable oil and grease, so that they pass off readily in the washing, leaving a very clean bottom, and reducing the amount of chlorine required. Furthermore there is a saving of fully 2 per cent. in shrinkage, and an increase of some 20 points in the strength of yarn. The goods have a more lofty and springy feel.

Caustic soda and soda ash are harsh alkalies and tend when coming in contact with the vegetable oil and grease to form a soap compound, part of which becomes fixed in the fiber when the goods are plaited down in the kier and is not readily removed by the washing, causing a variety of stains which very often means many seconds. When using caustic soda or soda ash a large amount of water is required to remove the caustic, which otherwise would precipitate some of the chlorine onto the fiber and cause trouble in the dyeing process.

We have many concerns who are using open and closed kiers and getting good results with the use of our bleaching assistant. Many of the knitters throughout New York State get very good results by simply using a washing machine, and running for 1 to 1 1/2 hours, some using the bleaching assistant by itself, and others using it in connection with caustic soda. This applies when bleaching in the roll.

Owing to the thorough cleansing of the goods when boiled out with our bleaching assistant, much less chlorine is required. As chloride of lime tends to harden or close the cells of the fiber, it is advisable to use as small a percentage as is possible.

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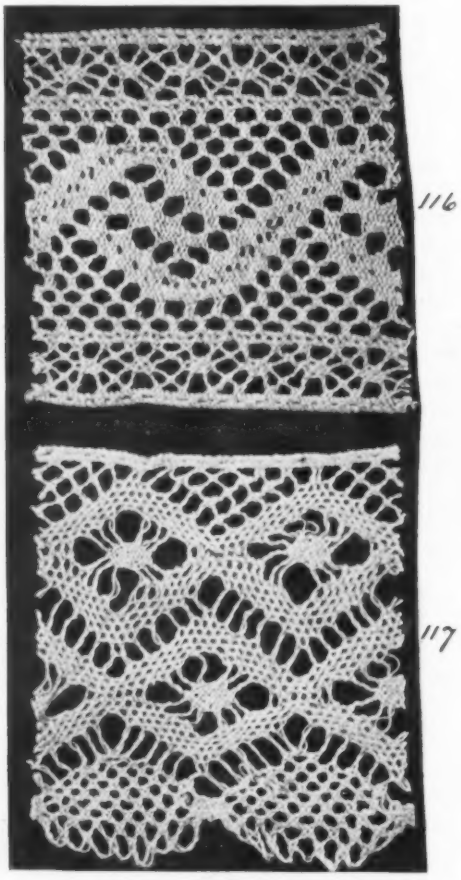

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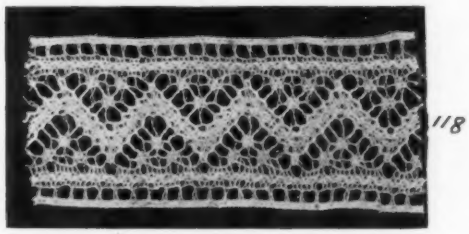

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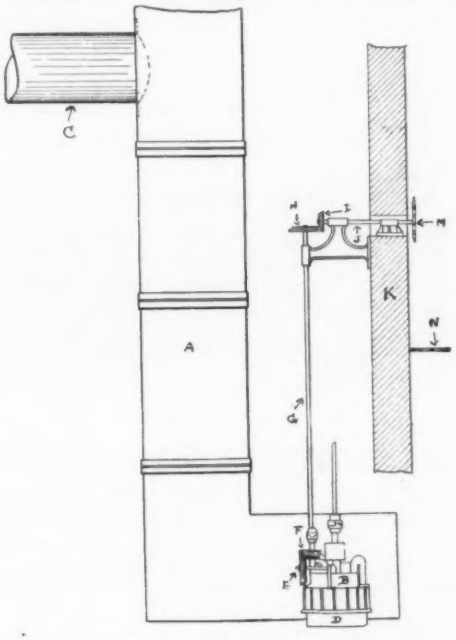
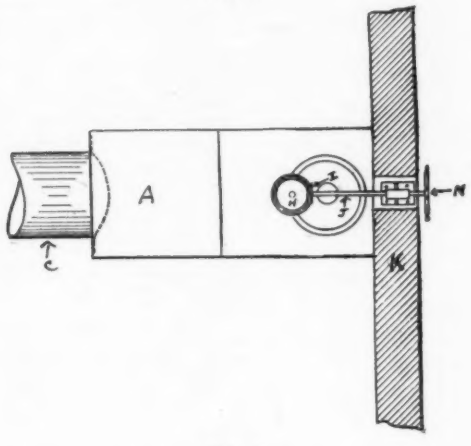


FIG. 1.



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Owing to the thorough cleansing of the goods when boiled out with our bleaching assistant, much less chlorine is required. As chloride of lime tends to harden or close the cells of the fiber, it is advisable to use as small a percentage as is possible.

Many bleachers make the mistake of depending on chloride of lime for bleaching, when in reality 95 per cent. of the bleaching should be done in the boiling out, and chloride of lime only used to nip up the white.

We should be very glad to send this concern a working sample of our bleaching assistant with full information so that they can make a trial, and also demonstrate to them by the orders from different concerns that we are selling the leading mills of the country. We have no doubt but that the use of our product would give satisfactory results.

Danker & Marston,
247 Atlantic Ave., Boston, Mass.

A THREE-THREAD KNIT FABRIC.

This fabric, recently patented, is made with three threads, producing parallel rows of ribs varying in size, the whole being backed by an inner layer. The backing is woven between the facing yarn and the tying yarn used for holding the backing yarn in place, and is not visible from the face of the fabric. In addition to tying the backing yarn, the tying yarn is also used as a part of the facing.

The main object of the new construction is to provide a fleeced lined fabric formed by three distinct yarns, the fleece yarn not being visible except on the inner side of the fabric.

Fig. 1 is a view showing the arrangement of the yarns for forming the new fabric, and looking from the inner side. Fig. 2 is an inside view of the fabric. Fig. 3 is a view looking at the face.

The fabric consists of parallel rows of ribs, 1 and 2, the former being somewhat larger and considerably looser than the latter to improve the effect. The yarn forming the ribs, 1, is the facing yarn, 3, while the yarn forming the ribs, 2, will be referred to as the tying and facing yarn, 4. The loops, 5 and 6, of the ribs, 1 and 2, are of the usual formation.

The fleecing or backing yarn, 7, is the essential feature of the new construction and it is claimed that the manner in which it is interwoven between ribs, 1 and 2, without exposing it on the face of the fabric, is new.

The fleecing or backing yarn, 7, is passed

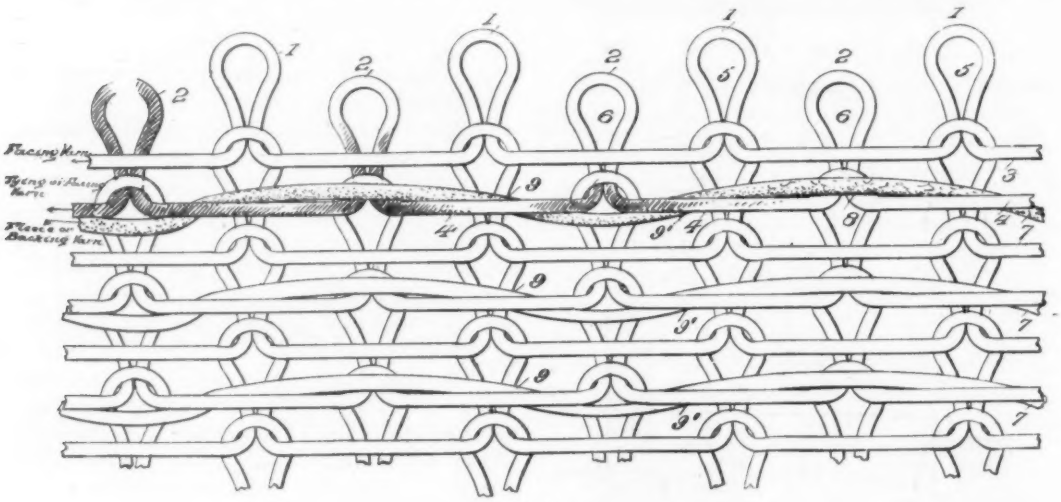


FIG. 1.

over the shank of a loop or rib, 2, as shown at 8, then over the adjacent rib, 1, under the tying or facing yarn, 4, over the loop of the next row of ribs, 2, under the tying or facing yarn, 4, again, and over the loops of the ribs, 1, as indicated at 9, then over the loop of the third row of ribs, 2, and so on throughout the whole body of the fabric. It

will thus be seen that the fleecing yarn appears on the back of the fabric first on one side and then on the other side of the connecting legs into which it engages. In placing the fleecing yarn, it is tied in the fabric by the tying or facing yarn at the points, 9 and 9', or twice between every three rows of ribs, 2, and skips all the ribs, 1.

The tying or facing yarn as it is drawn into place, tightens on the inner side, and as the fleecing or facing yarn covers a greater surface in proportion, it will be apparent that the inner side of the fabric will present substantially a fleece lined effect, while the outer side presents parallel rows of ribs of

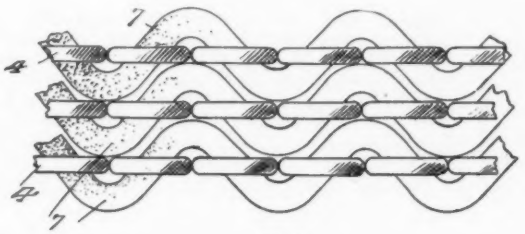


FIG. 2.

different proportions, the fleecing or backing yarn being covered on one side by the ribs. The ribs, 1, being loose, are more prominent than the ribs, 2, and provide sufficient elasticity which is essential in this class of fabrics.

The ribs, 1, may be made loose enough to entirely cover the ribs, 2, if desired, as the yarn from which they are formed does not in any manner interlock with the backing or fleecing yarn.

It is stated that fabrics have been made with three yarns, but in each instance, the third yarn is utilized solely as a tying medium. The two rows of ribs may or may not be of the same color and material having different characteristics for producing various designs may be substituted for yarn. It is claimed that the simplicity of the method greatly reduces the cost of manufacture, inasmuch as it dispenses with the complex machinery necessary in the manufacture of fleece lined fabric, and at the same time preserves the essential characteristics of ribbed fabric.

THE BRINTON FULL AUTOMATIC SEAMLESS HOSIERY MACHINE.

The illustration shows a full automatic seamless hosiery machine, which, although not entirely new, has never been previously illustrated and described. The builders are Messrs. Brinton & Co., 215 Race St., Philadelphia, Pa.

As will be noted by the picture, it is extremely simple in construction. It is suitable for either ladies' hosiery, half hose or for footing children's ribbed leg stockings. It is entirely automatic, and on ladies' hosiery runs continuously, passing from one

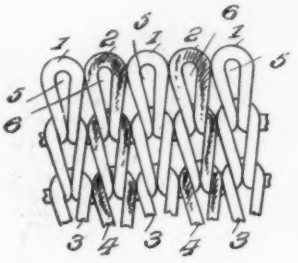


FIG. 3.

stocking to the other without any attention on the part of the operator. When making half hose it is automatic to a like degree on the plain stitch, but stops at the end of each half hose to permit another cylinder to be introduced with the rib top upon the needles.

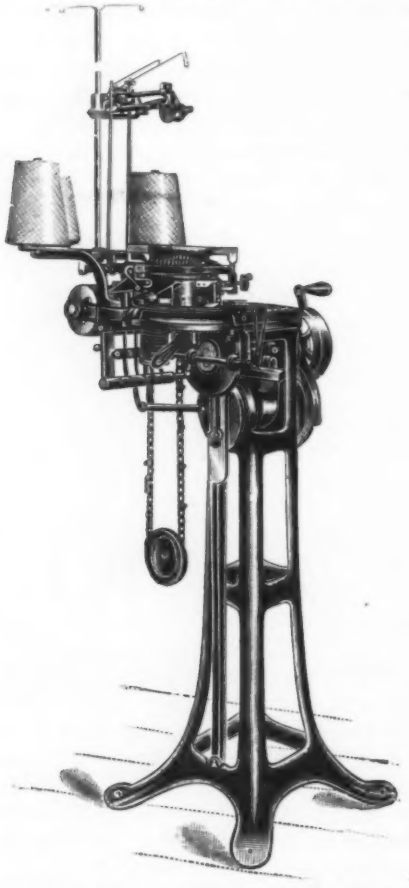
The system of interchangeable cylinders is used on these machines for transfer work. While a half hose is being knitted on one cylinder the other cylinder may be having a rib top placed on the needles so as to be ready to put in the machine as soon as the empty cylinder has been removed.

The machines are built in sizes from 2 1/4 inches, increasing by 1/4 inches up to 4 1/4 inches, with any number of needles required for the class of work to be produced, the range being from 84 needles up to 200.

The gauge of the machine may be changed by the substitution of other cylinders either coarser or finer. The length of the stocking is governed by a measuring chain and can be changed while the machine is in motion.

The production and speed of the machine varies of course according to the gauge, size and other conditions, but the manufacturers

state that estimating on 160 needles, 3 3/4 inches diameter, the production on ladies' hosiery, with one operator attending 12 to 15 machines, is 4 1/2 dozen pairs per day on each machine. On men's half hose, one operator attending six machines, the production is six dozen pairs per day to each



THE BRINTON FULL AUTOMATIC SEAMLESS HOSIERY MACHINE.

machine. The speed of the machine is 240 revolutions per minute. It may be belted from either overhead or floor shaft, one belt only being required.

The builders have issued a very complete descriptive catatogue and will be pleased to mail this and furnish other information on request from interested parties.

The first shipment of Manila hemp to the United States was made about 1824.

KNITTING MILL NEWS.

New Mills.

Alabama, Ashville. J. P. Montgomery, proprietor of a lumber mill located here, is at the head of a project for establishing a knitting mill. According to reports an organization will be completed shortly and plant started. No machinery or supplies have been contracted for.

*Georgia, Cedartown. The Southern Hosiery Mills, previously reported incorporated, was organized with the following officers: W. Ferguson, pres.; I. F. Mundy, sec., and James Heaton, C. F. Morgan, R. R. Beasley and D. H. Hubbard, directors. The buildings have been erected and machinery will be installed for knitting 250 dozen pairs of half hose daily. Manufacturing is expected to begin April 1. The Southern Hosiery Mills have capital stock of $20,000.

Illinois, Decatur. The Hinman Knitting Co. has been incorporated with capital stock of $20,000.

*New Hampshire, West Rumney. The new building erected for A. W. Stone is completed and machinery is being set up. The equipment will consist of 8 knitting machines for the manufacture of men's socks and a complete dyeing plant. Yarns will be bought. The product will be sold through Bacon & Co., 90-92 Franklin St., New York.

New Jersey, Camden. The Nelson Manufacturing Company, which will soon apply for a charter for the manufacture of knit goods, bathing suits, coat sweaters, ciderdowns, lawn sacks and wrappers, has leased and is remodelling a building at 516-18-20 Point Street, in which they will install machinery. The goods will be sold direct. It is their intention to have the plant in operation some time during the month of March.

*New York, Salem. The new knitting mill which we reported would be known as Smith & Temple has been incorporated as the Marble Knitting Mills Co. with a capital stock of $60,000. Alpheus W. Smith (Chicago), Thos. Temple and W. P. Smith, of Salem, are the incorporators. The plant consists of 31 knitting machines for the manufacture of gloves and mittens, and a complete dye and finishing plant.

*Ohio, Columbus. The Capitol Knitting Co., a new concern previously reported, is operating 20 knitting machines by electric power. Employment is given to 20 hands.

*Oklahoma, Oklahoma City. A. W. McKeand, secretary of the Chamber of Commerce, advises that they would like to get in touch with manufacturers of machinery for making hosiery, underwear and other knitted fabrics. The cotton mill proposition which we have previously reported is still being pushed but they are not prepared to make any definite statement for some weeks.

*Pennsylvania, Collingdale. The Raven Knitting Co., of which Smedley & Sterling are the proprietors, is operating 24 spring-needle knitters on women's seamless cotton and mercerized hosiery, 216-needle goods, which they are selling through Sawyer & Blake, N. Y. They buy 40/2 to 60/2 cotton yarn on cones. G. W. Sterling is

buyer. (Collingdale is about one mile from Darby.)

Pennsylvania, Philadelphia. G. W. Remsen, formerly superintendent of the late W. C. Urner & Co., in their Philadelphia plant, has leased the two story brick building on the West side of Front St. below Clearfield St., in which he will install machinery for the manufacture of cotton and mercerized hose and half hose of the highest grade. Mr. Remsen at this time states that he cannot give any particulars concerning the number of machines or the name under which the plant will be run, but contemplates having it in operation within a month or two.

Pennsylvania, Philadelphia. It is reported that Joseph F. Gee, formerly superintendent of the Hall Hosiery Co., has started up a plant in Germantown in which he is manufacturing a line of fine half hose

Pennsylvania, Philadelphia. Jos. Derk, one of the proprietors of the Standard Mills, manufacturers of curtains and draperies at 1316 Lawrence Street, J. D. Parke, formerly connected with the Standard Hosiery Co., and others are about to incorporate a company for the manufacture of both seamless and full-fashioned hosiery. They have secured temporary quarters at Mascher and York Sts., where they have put in several seamless machines on which they are making samples, and are now arranging fo the purchase of their full fashion machines.

*Pennsylvania, Philadelphia. M. M. Adams who recently started up the Iolo Hosiery Mills at 2420 Waterloo Streets, reports that he has changed the name to the Vim Knitting Mills. The plant contains 14 knitters and 15 ribbers which he is operating on 42-gauge children's ribbed hosiery. His samples are now on the market and orders are coming in. The production is sold through New York.

Pennsylvania, Pottsville. The Donohue Knitting Mills, which commenced operations about February 1 at 701 North 2d St., manufacture women's fine shaped ribbed underwear, operating 6 knitters, 2 ribbers and 8 sewing machines and using 24s cotton yarn. The product is sold through Lamson, King & Co., Philadelphia and New York.

*South Carolina, Rock Hill. It is reported that the proposed plant to be started by L. W. Redd, supt. and buyer of the Lexington Mfg. Co., Lexington, will be located at this place and will have an initial equipment of 50 knitting machines.

*Tennessee, Bristol. Manufacturing has started in the knitting mill established here by Ed P. Jones. 31 knitting machines comprise the equipment and all will be operated on seamless cotton half hose as fast as operatives can be taught. This is the first knitting mill to be established at this place. Employment will be given to 70 hands when the plant is running in full. The building is equipped with a steam power plant.

*Wisconsin, Luxemburg. The Inland Knitting Works, a new knitting mill previously reported, will start manufacturing woolen hosiery, underwear, sweaters and similar woolen goods, March 1. The new mill is completed and machinery is now being installed. This company has capital stock of $20,000. Peter Boucher is treasurer and buyer.

Enlargements and Improvements.

*Alabama, Alexander City. The addition to the Russell Mfg. Co. is completed and the power plant has been equipped. Spinning machinery will be installed in a few weeks. The addition is to supply yarn to the knitting department of this company.

*Alabama, Talladega. S. J. Johnson succeeded A. G. Storey as president of the Talladega Hosiery Mills at the annual meeting. As previously reported P. S. Williams treas. and general manager was instructed to look into the matter of erecting a new storehouse. A. W. Harden is superintendent and buyer of this plant.

Canada, Ontario, Clinton. The Clinton Knitting Co., Ltd., has completed a number of improvements including the erection of a new 2-story cement building, 30 by 60 ft., to be used for a dye house and finishing room. The capital stock has been increased from $25,000 to $50,000. Orders are being placed for additional knitting machines to manufacture heavy worsted hosiery and half hose.

*Illinois, Rockford. The Burson Knitting Co. at their annual meeting voted to increase the capital stock from $500,000 to $800,000. It is reported that the business of the company has shown no falling off and the usual force has been occupied at work full time. A large addition was completed in December and is now in operation. This company manufactures ladies' full fashioned cotton hosiery on 650 latch needle knitting and 75 sewing machines. Ralph Emerson is pres. and W. E. Hinchliff is treas. and buyer.

*Iowa, Shenandoah. Preparations are going forward for starting the Shenandoah Knitting Mills. The plant will be in operation most likely during February.

*Massachusetts, Great Barrington. The Barrington Building Co. have contract to make necessary repairs on the building to be occupied by the Reliable Knitting Co. and Hammer Bros. have contract to install a heating system.

*North Carolina, Burlington. The Whitehead Hosiery Mills, incorporated in October, will increase the capital stock from $10,000 to $15,000, shortly. A number of knitting machines will be added to the 50 machines now operated. Half hose is manufactured from combed peeler, mercerized and lisle and sold direct to manufacturers in the gray. A gasoline engine supplies power to the plant. Yarns are bought.

North Carolina, Fayetteville. The Tolar, Hart and Hope Mills have ordered 50 Universal winding machines to replace their remaining drum winders.

Pennsylvania, Ashley. A one-story brick addition 122 by 140 ft. is being erected for Ambrose West, manufacturer of fancy cotton half hose on 100 knitting machines. The new building will have space for 200 additional machines. Ambrose West is proprietor and buyer.

*Pennsylvania, Philadelphia. Messrs. Sauer & Hahn, architects, have completed plans and invited estimates for the erection of the new plant to be occupied by the Standard Hosiery Co. at 1310-1326 N. Lawrence St. The buildings will be of brick and concrete, of slow burning construction. There will be a spinning mill, in which they will manufacture their own cotton yarn, containing about 10,000 spindles, measuring 147 by 38 feet; a picker house, 37 by 40 feet; a boiler house, 53 by 40 feet; an engine house 40 by 46 feet, and an office 30 by 38 feet. Besides these buildings there will be erected a reinforced concrete reservoir, 38 by 38 feet, with a capacity of 75,000 gallons, and a coal vault with a capacity of 100 tons. The plant will cost $100,000 and its equipment $38,000.

Pennsylvania, Philadelphia. The Girard Hosiery Mills, of which Stirnau and Ginsburg are the proprietors, located at Mascher and York Sts., where they are manufacturing women's cotton hosiery report that their business is increasing very rapidly and they are about to place an order for 15 new knitters for immediate delivery. They sell direct.

*Tennessee, Clinton. All the improvements at the Magnet Knitting Mills have been completed and every one of the 80 knitting machines, which comprises the enlarged equipment, are running until 9 o'clock at night. This schedule will be necessary until April to take care of orders on file.

Tennessee, Loudon. The Loudon Hosiery Mills is reported as planning to double the present equipment of 35 knitting machines. Children's and infant's cotton hosiery and women's ribbed hosiery are manufactured, dyed and finished. C. H. Bacon is treas. and buyer.

*Vermont, Bennington. Forty additional knitting machines will be added to the equipment of the Vermont Hosiery & Machinery Co. during the spring. We reported last week their decision to issue additional stock not to exceed $75,000.

*Wisconsin, Delavan. The Bradley Knitting Company, formerly the Globe Knitting Mills, now has a capital stock of $64,000. It is operating 35 knitting and 14 sewing machines on sweaters, cardigans and similar goods. The plant is operated by gasolene power. J. J. Phoenix is pres.; W. H. Tyrrell, treas. and buyer; and W. B. Tyrrell is supt.

Wisconsin, Janesville. At the annual meeting of the Lewis Knitting Co. the following officers were re-elected: F. F. Lewis, president; V. R. Lewis, vice-president and J. L. Wilcox, secretary, treasurer and buyer. Two floors of the Bostwick Bldg. at Court and Park Sts. have been leased to provide additional manufacturing space. Steps have been taken to issue the balance of the treasury stock the company has on hand, increasing the paid up capital to $100,000 and putting it in shape to properly take care of its growing business.

*Wisconsin, Milwaukee. The recent fire in the Milwaukee Knitting Works caused only a partial loss on machinery, but entirely destroyed the stock. Preparations are being made to resume manufacturing at as early a date as possible for the company has enough orders on hand to keep them running for several months. Knit shawls and fancy knit goods are the product on 20 knitting machines and 8 sewing machines. Leopold Laev is treasurer and buyer. Power is supplied by gas engine.

Wisconsin, Milwaukee. The Holeproof Hosiery Co. is making arrangements to increase its output.

*Wisconsin, Milwaukee. The Everwear Hosiery Co. will add 50 new knitting machines to the present equipment of 124 machines when they remove to their new mill on 5th Ave., about April 1. The capital stock has been increased from $20,000 to $40,000 to provide for an extension of their business. Men's and women's hosiery is the product. Fred M. Hanson is now president and treasurer and Joseph H. Zens, vice-president and superintendent. Both electric and steam power will be used.

*Pennsylvania, Mifflintown. The new company which we reported as being organized, to start a dyeing and finishing plant at this place, by Frederick Schimmel of the Novelty Print Works of Philadelphia, will absorb the latter concern. As previously reported it is expected the new plant will be in operation by April 1.

*Pennsylvania, Philadelphia. Frederick Schimmel, proprietor of the Novelty Print Works, Jasper St., reports that he has recently purchased the entire equipment of the National Dye & Finishing Works, located at Jasper and York Sts., and is removing it to his new plant at Mifflintown, Pa., where he will again put it in operation. Mr. Schimmel will continue his business at Mifflintown under the name of the Novelty Print Works and in addition to printing window shades and hosiery, will also do a line of extracting and discharge work and dyeing of hosiery. He expects to be in his new quarters after the 1st of March next.

Pennsylvania, Philadelphia. Messrs. Jos. J. Scheiter & Co., whose plant has been located at Howard St. and Lehigh Ave., have removed to the Bromley Mills at Jasper and York Sts., where they have secured the basement, part of the first floor and the fifth floor. They are manufacturers of hair cloth for the hat, clothing and upholstery trades, drawers of hair and converters of textiles, and claim that their business has been growing in such rapid stages that a removal to larger quarters was necessary. Up to the time of their removal to this location they operated 56 hair cloth looms, 5 jacquard looms and 30 narrow looms on serges, the number of which has been almost doubled. This concern is also the proprietor of the York Finishing Works, finishers of hair cloths, cotton fabrics and converters of cotton goods, and claim that this department is also very busy running both day and night. In addition to these two plants they are also identified with the American Transforming Works of Newtown, Pa., manufacturers of imitation pelts, for whom they have been acting as distributing agents ever since that plant was started.

Pennsylvania, Philadelphia. S. H. Downs, winder and spooler of silk, who has been located at 2nd and Diamond for the past year, has removed his

plant to the Bromley Mills, Jasper and York Sts., where he has increased his facilities for doing this line of work.

*Pennsylvania, Philadelphia. The new plant started by E. C. Beetem & Son at the cor. Jefferson and Phillip Sts. is known as the "Raglin" Handcraft Mills, instead of the Parklin Cotton Mills as previously reported. Cloth and rag rugs, curtains, couch covers and rag carpets are manufactured. This company also operates the Carlisle Carpet Mills. C. G. Beetem is buyer. At present the equipment consists of hand looms, but it is expected that power looms will be added during the coming Summer.

*Pennsylvania, Wilkesbarre. The Wyoming Yarn Co., which we reported last week as equipping a plant for mercerizing, bleaching and coning yarns, will commence manufacturing about March 10, giving employment to 60 people. The company has capital stock of $75,000. George H. Craven is president, superintendent and buyer; C. O. Johnston is treasurer. Steam power will be used.

*Rhode Island, Pawtucket. The new addition to the plant of the Smith Webbing Co. which we reported in August would be built, is completed, and some of the machinery has been installed. The plant is running full time. 130 looms are operated on narrow elastic and non-elastic fabrics.

Washington, Walla Walla. A new jute mill is to be built at the State Penitentiary. 70 looms and 7 sewing machines are operated in the present plant on burlaps, grain bags, twine and similar goods. W. S. McCauley is superintendent.

Mills Starting Up.

New York, Mechanicsville. The Union Mills, Sagamore Knitting Co., is now running the whole plant on full time after a shut-down of two months.

*Virginia, Berkeley. The Chesapeake Knitting Mills and the Elizabeth Knitting Mills, both under the management of Wm. Sloane & Co., have started up and are running full time. We reported these mills as closed last November. The combined plants operate 12 sets of wool cards and 110 knitting machines on men's fleece lined underwear. The Tidewater Knitting Mills of Portsmouth, Va., also operated by Wm. Sloane & Co., is preparing to resume operations on full time. Boys' fleece lined underwear is manufactured in this plant on 6 sets of wool cards, 57 knitting machines and 100 sewing machines. 20s to 30s yarn is bought on cones.

Mills Shutting Down.

*Pennsylvania, Slatington. The Slatington Knitting Co. has shut down for two weeks. The plant was recently increased to 48 knitting machines.

Personals.

Wm. M. Dress has accepted a position as overseer of knitting for the Stuart-Brown Underwear Company, Piqua, Ohio.

Pardon B. Sanford, superintendent of the Utica Knitting Company, Utica, N. Y., has severed his connection with that company. He is to take the superintendency of the New York Mills, N. Y. Arnold B. Sanford, a brother, will take the position as superintendent of the No. 4 Mill of the Utica Knitting Company. He formerly held the position as overseer of carding.

Watson Dunmore has accepted a position as overseer of the carding department to fill the position made vacant by Arnold B. Sanford of the Utica Knitting Company, Utica, N. Y.

Jos. W. Miller has accepted the position as overseer of knitting for Jos. Simpson Sons, Toronto, Ont., Canada. He was formerly employed at the Perry Knitting Company, Perry, N. Y.

Wm. J. Byron of Laconia, N. H., has accepted the position as overseer of knitting for the Lawrence Knitting Company, Methuen, Mass.

D. J. Watkins has accepted a position as sewing machine fixer for the H. L. Welch Hosiery Company, Waterville, Conn. He was formerly employed at Malone, N. Y.

Albert E. Wood has accepted the position as overseer of dyeing for the Clayville Knitting Company, Clayville, N. Y. He was formerly employed at the Paragon Knitting Mills, Mohawk, N. Y.

Geo. Cotrill, assistant manager for the Vermont Hosiery Company, Northfield, Vt., has been obliged to resign on account of ill health.

Geo. E. Stevens has accepted the position as superintendent for the Blackstone Stocking Company, Central Falls, R. I. Mr. Stevens comes from Laconia, N. H.

J. H. C. Church has resigned as treasurer of the Reliable Knitting Company, Great Barrington, Mass. C. H. Booth has been elected to fill the vacancy.

J. F. Haynes, formerly at Phoenix City, Ala., is now boss carder for the Richmond Hosiery Mills, Roseville, Ga.

Jacob A. Ross, superintendent of the Roff Underwear Company, Cohoes, N. Y., has resigned to accept a position with the N. E. Cotton Yarn Company, with headquarters at Albany.

Walter Roe has accepted the position as superintendent of the Goldsboro Knitting Mills, Goldsboro, N. C. He was formerly employed at the Oneida Hosiery Company, Oneida, N. Y., as overseer of knitting.

John F. Collins has accepted the position as superintendent of the Eagle Knitting Company, No. 2 Mill, Hamilton, Ont., Canada.

New Machinery and Processes.

This department is designed to present from month to month a brief mention of new machinery, devices and processes being brought out in this country and abroad, that are of interest to textile manufacturers. It is not a list of patents, but of improvements coming on the market. The idea being to present to our readers a systematic monthly record of new machinery etc., of interest to textile mill men.
We invite machine builders and others to send us such information for this department.

Taking Lease on the Slasher. Jacob K. Altemus, 2816 North Fourth St., Philadelphia, Pa. A device for taking a warp lease on the slasher. A working lease can be obtained very easily and quickly. The device can be seen at Mr. Altemus' works at Philadelphia.

Lisle Finish Process. A. N. Dubois, 1 Grace St., Wilmington, N. C., states that he has perfected the process of giving a lisle thread finish to hosiery and underwear in the white, to be either dyed or bleached after the lisle has been put on. The results are said to be particularly satisfactory in connection with sulphur black dyes, eliminating a large part of the cost of singeing. He desires to sell mill rights.

Thread Lubricator. Scholler Bros. Company, 3301 Amber St., Phila., are placing on the market an improved thread lubricator for knitting and winding machines. Several advantages are claimed for this lubricator among them the following: It regulates the flow of the lubricant; it has a minimum surface of contact, hence least tension; it assures thorough and even lubrication and is economical. The container is made of glass, enabling the operator to see at a glance when the lubricant is exhausted. The upper regulating device is made of brass. Lubricators for trial and descriptive circular sent upon request to the manufacturers.

Lubritol. Scholler Brothers Company, 3301 Amber St., Phila., are placing upon the market a compound for hosiery and knit goods manufacturers. This compound, known as "Lubritol" is for lubricating or softening yarns during the process of knitting or winding. It is a thin liquid at all temperatures, does not gum or thicken; is readily absorbed by the fiber, producing even lubrication. It is guaranteed stainless and not to interfere with subsequent dyeing or bleaching of goods as it is readily soluble in water. It has no action on coloring matters and is used to advantage when knitting dyed yarns. Their descriptive circular will be mailed upon request.

Hopper for Northrop Loom. The Draper Co., Hopedale, Mass., have made improvements in the hopper for the Northrop loom and are now ready to make deliveries. Further reference to this improved hopper will be found in this issue.

Cork Insert Mule Frictions. The National Brake & Clutch Co., 16 State St., Boston, have made a new and successful application of their cork inserts to spinning mules. The Davis & Furber mules in their new Wood Worsted Mills are now equipped with these frictions. They are prepared to fill orders for their use.

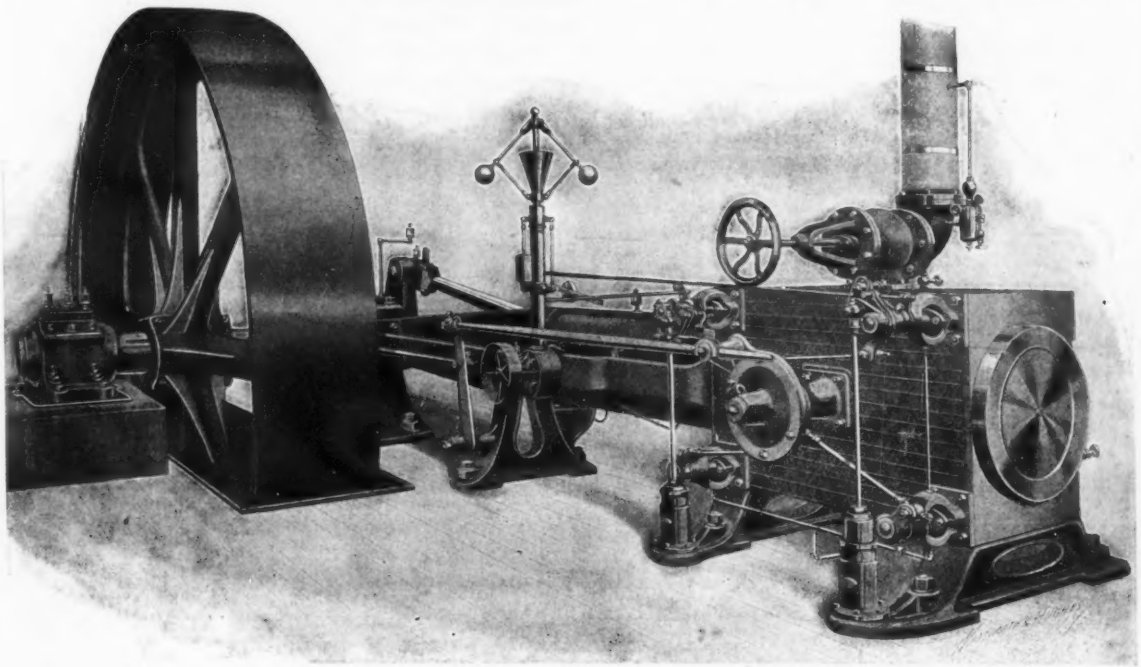
Automatic Mercerizing Machine. The Machinenfabrik St. Georgen Commandit-Gesellschaft of St. Georgen, Switzerland. An automatic machine for mercerizing yarn in the skein, which is described in another part of this issue.

Condenser for Woolen. W. B. Siebel & Co., Dieringhausen, Germany. An improved condenser for finishing cards. The chief claim is uniformity in the size of the roving.

Plain Selvage Motion. F. H. Gosling & Co., Broadfield Machine Works, Heywood, England. A selvage motion designed to weave a plain selvage on goods woven with a sateen weave.

THE IMPROVED FISHKILL-CORLISS HORIZONTAL ENGINE.

Improvements made recently in the Fishkill-Corliss Horizontal Engine, built by the Fishkill Landing Machine Company, Fishkill-on-the-Hudson, New York, adapt it especially for silk, knitting, cotton and woolen mills and other textile manufacturing plants where a reliable, durable and economical steam power is desired.



THE STANDARD FISHKILL-CORLISS ENGINE.

In it are found all the best features of the original Corliss engine, together with many others originated by the builders and secured by letters patent. Briefly, the girder frame with which the engine is provided, is specially designed for compactness and rigidity, the disposition of the metal which it contains being made in such a way that great strength is obtained. The supports under the frame are of such shape and are so disposed as to secure absolute rigidity in the parts supported while the strength of the various parts is amply sufficient to withstand all strains that they will ever be called upon to endure while working even above rated capacity. By this means continual alignment is secured. The center support to the frame serves also as a support for the pin upon which the rocker arm works. The legs which support the cylinder are heavy enough to furnish the necessary strength and rigidity and at the same time give a large bearing surface upon the foundation. Two of the legs are intended to furnish bases for the support of the dash pots, which insures their remaining in line and at the same time keeps them above the floor where all portions are readily accessible.

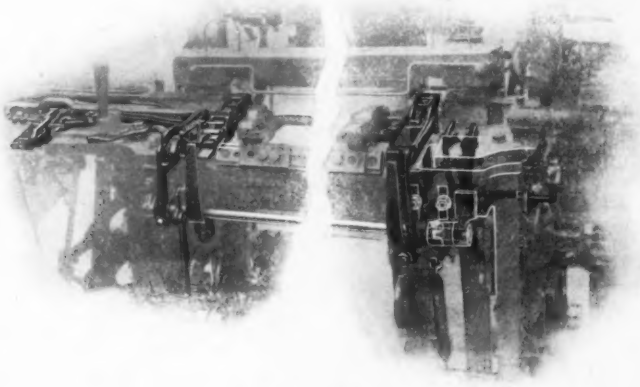
The adoption of a patented releasing valve gear instead of the old-time "crab claw" and liberating hook formerly used for operating the steam valve is a noticeable improvement and has contributed largely to the popularity of the engine.

The Fishkill Landing Machine Co. have installed their engines in the four plants of the Givernaud Bros. at Homestead, Hacken-

sack, West Hoboken, N. J., and Norwich, Conn.; the Post Silk Company, Waldwick, N. J.; Elrodt & Lynch at Matteawan, N. Y.; Union Knitting Mills, Hudson, N. Y., and others located in Philmont, Troy, Waterford, Mechanicville, Glen Falls, Amsterdam, Utica, Rome and Oswego, N. Y.

THE DOUBLE FORK.

In their attempt to produce perfect cloth on automatic looms The Draper Co., Hopedale, Mass., soon discovered that one fork on one side of the cloth could not possibly protect against all contingencies where minor defects assumed importance in view of the uses for which the goods were intended. Two forks can prevent thin places by governing the take-up from either side of the cloth, detecting absence of filling as soon as it is apparent by the shuttle leaving the cloth without laying filling. Two forks also provide protection against any error in working of either fork singly.



THE DOUBLE FORK.

The cut shows the double fork on a feeler loom, the parts in black relief being feeler (starting at left), left fork, right fork and feeler thread cutter. This combination can be set to change a bobbin on breakage of weft or stop the loom as desired. The Draper Co. state that the present mechanism is much simplified as compared with their earlier devices for the same purpose and is giving great satisfaction wherever used.

BUILDING A MILL TOWN IN THE WILDERNESS.

An inland town, surrounded by the mountains of western North Carolina, is now one of the most striking examples of the phenomenal industrial growth of the South. At Canton, N. C., the erection of an industrial township has just been completed. The entire plant, which forms its nucleus, will be devoted to the production of wood fiber and was erected for the Champion Fiber Company at a cost of more than $2,000,000 by Frank B. Gilbreth, of New York. The capacity of the plant is rated at 250 tons a day, making it the largest wood-pulp factory in this country, if not in the world.

The various buildings which comprise this industrial plant, 35 in number, have formed a new industrial city. An especially significant feature of the undertaking is the fact that the township was created rather than developed. The projectors of the plant, whose whirring machinery now furnishes employment for half a thousand men, were encountered some few months ago by the unbroken solitude of a forest country. Three or four rough log huts represented the sum total of the evidences of previous human activity. The contrast of such a picture with the scenes of industry which now obtain gives an inkling of the magnitude of such a transformation.

The story of the unique problems encountered and the ingenious methods by which

their solution was accomplished makes an interesting narrative. The first obstacle to present itself was that of transportation. Canton is in Hayward County, on the Murphy branch of the Southern Railway, 18 miles from Asheville, N. C. The site of the Champion Fiber Company's plant includes some 40 acres of valley country, lying between two parallel mountain ranges; surrounding it is the small town of buildings necessary to care for the material needs of the workmen. Since over 10,000,000 brick and 50,000 barrels of cement alone were used, the erection of railroad spurs were necessary in order to obviate long carriage and its incident expense and delay.

During the course of operations nearly 4,000 cars of material were received. Incidentally, the problem for the Murphy branch of the Southern Railway was no small one, since such an amount of traffic equalled the entire amount handled for the three years previous. During the construction work nearly three miles of siding were constructed immediately on the site in order to make possible the unloading of material at the shortest distance from where it was to be placed. Because of the isolated location it was necessary to keep in stock large quantities of supplies.

All kinds of mechanics and even laborers were extremely hard to obtain in the western part of North Carolina owing to the sparsely settled nature of the country and to the demand for labor throughout the entire country. The towns for miles around were scoured for workmen with but little result. It therefore became necessary to bring in several hundred Italian laborers and quarter them immediately on the site, despite the opposition of local sentiment, which was decidedly against the importation of foreign labor, especially Italians. Dire results were threatened, should the Italians be brought into the mountains. But a strong advance guard was sent and little trouble was encountered from this source after the first few rough and tumble fights in the shanties.

Bricklayers and mechanics had to be transported from points as far distant as Boston and Chicago; carpenters, as well, were brought from widely separated places.

An interesting method by which speed was increased, and one which has been used before by the Frank B. Gilbreth organization with excellent results, consisted in so arranging the work that speed contests might take place between the various gangs of men working under similar conditions.

This was first done with the pile driving crews. Five crews were organized and grouped by nationalities wherever possible; if not, by the localities from which the men came. The driver which placed the greatest number of piles each day was awarded the flag, which thus denoted the star crew. As there were 800 men at work at that time it was considered so great an honor to have this flag flying at the head of the driver as to stimulate the various crews to effort such as could never have been obtained otherwise. In fact at one time rivalry became so intense that the superintendent himself had to be on the job an hour before starting time in order to watch the crews so that unfair advantage might not be taken by starting before the whistle blew.

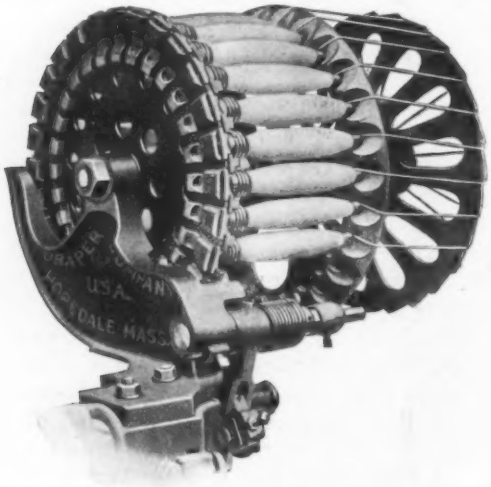
The thirty-five buildings which make up the plant offer some interesting illustrations of modern fireproof mill construction. Constructed of concrete, steel and brick, some of the structures present the appearance of skyscrapers. A feature of some of the buildings is the use of pin-connected girder frames, supplied by the General Fireproofing Company, of Youngstown, O.

The main timber reserves of this section include some 40,000 acres, containing all sorts of timber. It is a fact not generally known that the high ridges of the mountains of North Carolina grow a species of timber resembling the spruce of the more northern states. This is explained to a certain extent by the altitude and soil conditions which are somewhat analogous to those found in the hill countries of Northern Maine, Michigan and Wisconsin.

Forty per cent. of the imports into Brazil enter at Rio de Janeiro.

THE NEW NORTHROP HOPPER.

The Draper Co., Hopedale, Mass., call attention to the improved hopper for the Northrop loom. It does away with the rocking support under the head of the bobbin, which has often caused trouble by



THE NORTHROP HOPPER.

catching and breaking; it has no confusion of notches in the small end bobbin disc; bobbins are more easily inserted into place; bobbins are transferred into shuttle with less power; the rotating mechanism locks more positively; the filling stud is easily removed by hand, a T shaped handle being cast on the holding screw. The builders are ready to supply this hopper as desired.

The value of the exports of textile goods from the United States to Brazil decreased from $25,278 in 1905 to $9,545 in 1906. In the same period the value of the manufactured goods exported declined from $1,019,371 in 1905 to $721,766 in 1906.

Rags enter into the foreign commerce of the German Empire to the extent of nearly $5,000,000 annually. The United States, in 1906, bought 23,866 tons of cotton and linen rags, valued at $516,387, and of silk and woolen, 2,821 tons, valued at $170,931.

CORK INSERTS IN LOOM FRICTIONS.

The question of friction clutch construction where it is desired to absorb power with the least wear and yet allow the necessary amount of flexibility, whether used in driving line shafting, looms, or other types of machinery, involves many problems.

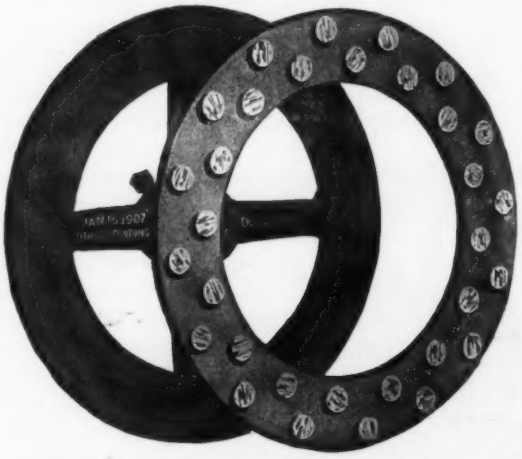
The coefficient of friction of cork (.36) is much higher than any other material which possesses the combined qualities of durability, resiliency, non-absorption, and indifference to excessive heat, and we know no other substance, or combination of substances, which has been tried that has been found to fill the requirements as well as cork when used as an insert.

Common clutch troubles are excessive slipping with consequent loss of power and burning or abrasion of the frictional surfaces, and an unyielding clutch resulting in serious strain on the mechanism. It has been found that by using cork in certain proportions inserted in sockets in one member of the clutch an accelerating engagement is obtained with greatly increased ultimate holding power and one not materially affected by oil, water, dust, moisture, etc. Exhaustive tests made on several types of frictions under the supervision of Prof. Ira M. Hollis at Harvard University, and on loom friction pulleys, by Prof. C. M. Allen at the Worcester Polytechnic Institute, bear out this assertion.

For looms frictions have been fitted with leather facings, a more or less unsuitable material owing to its tendency to burn if allowed to slip, its affinity for oil, water, or moisture, and the necessity of cleaning, adjusting, and refacing clutches in which it is used as a facing. While this material was the best obtainable for this work prior to the adoption of cork inserts, the results obtained from its use are acknowledged to be inferior to the results obtained by the use of cork inserts as a frictional surface.

The fact that the American Woolen Co., after six years experience with cork insert frictions, equipped the one thousand looms and all the mules in the New Worsted Co. mills at Lawrence, Mass., with cork in-

sert frictions, is strong evidence that these inserts have merit which should be carefully investigated by manufacturers throughout the United States using any type of frictions as a means of transmitting power. The use

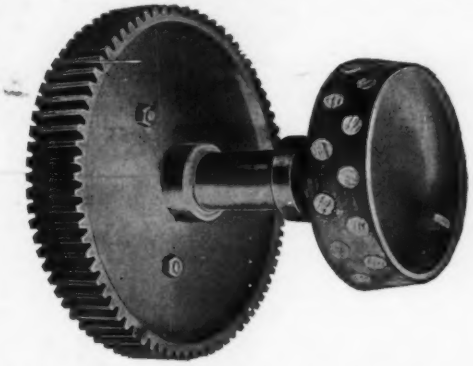


of cork insert frictions is not limited to woolen looms as practically any type of friction may be fitted with these inserts and yield surprisingly satisfactory results. It is claimed that the cork insert friction not only gives better results, but requires less repairs

and has longer life than other type, besides being the cheapest friction obtainable.

The Amoskeag Mfg. Co. after many months experience with cork insert frictions recently specified these frictions on an order for about one thousand gingham looms and is rapidly equipping the looms now in use throughout its mills with the so-called "Ready-to-Use Cork Insert" rings, carrying these rings in stock and replacing leather facings with them as fast as seems practicable. This company is rapidly equipping all its Worrall line shafting clutches and its dynamo and motor pulleys with cork inserts.

About one hundred and twenty-five other mills are in the same manner utilizing cork inserts for frictional purposes to a greater or less extent, and it is believed that when it is generally realized that cork insert pul-



leys transmit from 50 to 100 per cent. more power than plain cast iron pulleys, there will be a great demand for a type of pulley which is practically indestructible, which will eliminate the losses from slipping of belts and will prolong the life of belts by allowing them to be run at a greatly reduced tension.

India uses about 4 3/4 billion yards of cotton cloth annually, of which about one-half is imported, one-sixth woven in the Indian cotton mills and one-third on hand looms.

It is said in the silk mills at Shanghai there are twenty thousand workers, among whom are children that work at three cents a day and women at five cents. The highest paid get twenty-six cents for a thirteen-hour day. In the Shanghai cotton mills the best women workers get fourteen cents a day; the poorest five cents, the hours being from six to six, with thirty minutes at noon for dinner.

THE NEW FOSTER MODEL, NO. 12, CONE AND TUBE WINDER.

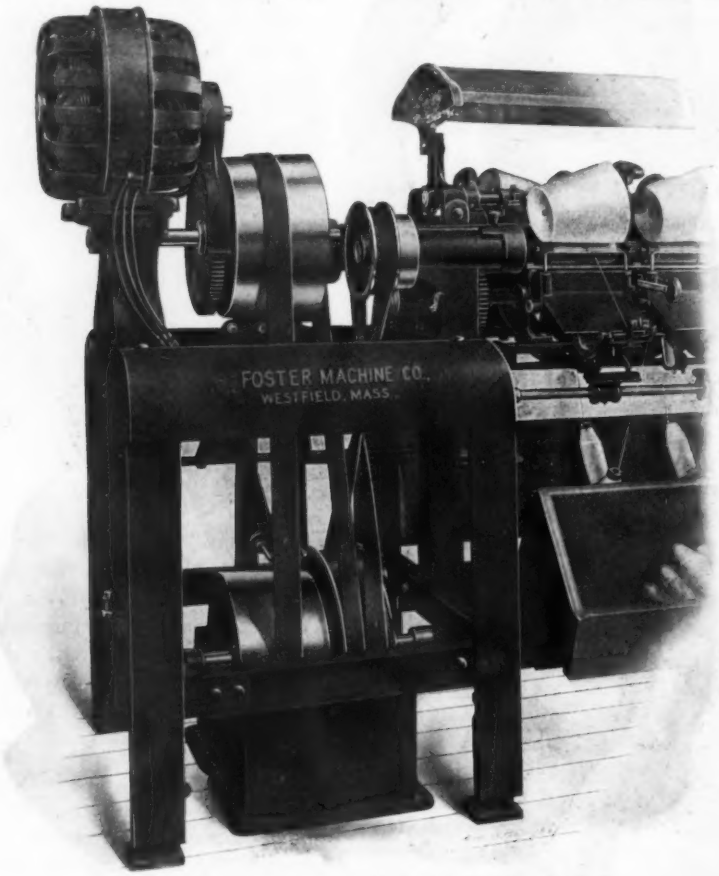
The Foster Machine Company of Westfield, Mass., who are specialists in the building of quick traverse winding machines, have designed an improved cone and tube winder, the head end of which is shown here.

The heavy drums of former machines are replaced with light cams and there are many other changes in construction, the object being to reduce the work required of the operative and thus further economize in the cost of winding.

The attachments for cone winding include the differential motion which prevents "ribbon wind" and produces a finished cone package of the proper taper for direct knitting. The ordinary paper cone may be used for this increased taper or mandrils can be supplied for the Foster special paper cone.

The differential motion on all Foster hosiery yarn winders lays each coil of yarn with constantly changing spacings. This in itself allows the unwinding of the coils in the process of knitting with a minimum friction from the cone surface. Now that this friction is entirely eliminated by the increased taper of cone, produced by model No. 12, it would seem that the problem of knitting direct from cones had been solved.

The new machine may be used for all winding purposes and is interchangeable for tube winding, skein winding and doubling. Very little power is used, the 100-spindle machine requiring but a 2 1/4-inch single belt for driving.



NEW FOSTER MODEL NO. 12 CONE AND TUBE WINDER.

Dyeing, Bleaching, Printing, Etc.

MORDANTING WOOL.

A method of mordanting wool, recently patented, is described as follows:

One of the most common methods for mordanting wool is to boil the fiber with a solution of a metallic salt, such as bichromate of potash or soda, with the addition of dilute acid, or an acid salt. The acid or acid salt acts upon the bichromate salt to liberate the chromic acid, which is absorbed by the fiber. When the latter is subjected to the coloring matter, the chromic acid combines with and fixes the color upon the fiber in a form which is insoluble, and comparatively inert to the action of light, producing what is known as a fast color. When acids or acid salts are used to take up the sodium or potassium from the bichromate, the reaction is rapid, with the result that the wool is not evenly acted upon by the mordant, and, therefore, when placed in the dye bath, it takes the color in an uneven manner, so that although parts of the fiber may be perfectly dyed, and receive a strong and uniform color, other parts will be of an inferior shade.

It is the object of the new process to mordant by the use of a material which will liberate the chromic acid gradually and comparatively slowly, so that all of the fiber may be uniformly acted upon by the acid, and a uniform and even color will be obtained from the later action of the dye. A further object is to cheapen the process of mordanting, while getting results not only as good as, but even better than those obtained by more expensive methods.

The process consists in treating the wool to be dyed with bichromate of ammonia, which, when heated, will break down and liberate the chromic acid. A bath is made of a solution of salts, which will react with each other to form bichromate of ammonia, these being an alkali bichromate, such as that of either potassium or sodium, and an ammonium salt. Any suitable salt of ammonia may be used, but those preferred are the ones which are the least expensive, such as the sulphur, chloride or nitrate. Instead of these, any salt may be used whose negative element or radical has a stronger affinity for potassium or sodium than the bichromate radical. The proportions of the agents in the bath are such as to cause the ammonium salt to act upon the bichromate salt with the formation of a bichromate of ammonia and a salt of potassium or sodium, such as sulphate, chloride nitrate, etc.

The material to be dyed is boiled in this bath for a period varying from one to one and a half hours, during which the ammonium bichromate is first produced, and is then gradually broken up into chromic acid and ammonia, the chromic acid being absorbed by and deposited on the fiber. The goods are then taken out and washed, whereupon they are ready for dyeing. The reactions take place approximately according to the formulas as follows:

$$K_2Cr_2O_7 + (NH_4)_2SO_4 = (NH_4)_2Cr_2O_7 + K_2SO_4.$$

After further heating, the bichromate of ammonia is decomposed as follows:

$$(NH_4)_2Cr_2O_7 = 2NH_3 + 2CrO_3 + H_2O.$$

The exact quantities of the ingredients employed in the process are subject to variation according to the depth of mordanting required, but it has been found that for ordinary purposes the best results are obtained when three pounds of bichromate are used to each one hundred pounds of the wool to be mordanted, and when the amount of ammonium sulphate is about one-half the weight of the bichromate, that is, about one and one-half pounds.

As already stated, other common salts of ammonia, such as chloride or nitrate, may be substituted for the sulphate, and when such substitutions are made the quantities of the ammonium salts are suitably varied. Thus in using the chloride the amount necessary to react with three pounds of the alkali bichromate on one hundred pounds of

wool is nineteen ounces, while twenty-seven ounces of the nitrate are required to do the same work.

The wool may be put into the bath either before or after the latter is brought to the boiling point, it being essential only that it should be subjected to the action of the reagents at the temperature of boiling for the period before named, that is, between one hour and an hour and a half. It is easier, however, and requires less attention to immerse the wool before the compound begins to boil, and accordingly the wool and the reagents are put into the bath together and the latter is then brought to the boiling point.

This process differs from the usual methods in that a neutral salt is used to react upon the bichromate, whereby the mordant is deposited upon the fiber evenly and slowly, insuring better results in the after dyeing, as regards permanence of the dye and uniformity of color.

By the use of this method it is claimed that a great economy over prior methods is obtained, on account of the large supply and low cost of the ammonium salts available. The processes at the present time most generally in use are performed by the action upon the bichromate salt of either sulphuric acid, oxalic acid, cream of tartar, one-half refined tartar, or lactic acid. Of these, it is stated, the most satisfactory results are obtained when cream of tartar is used, but the cost of using this product is excessive, and the other acids are used according to the taste and the wealth of the dyer. Generally the results obtained vary from the best possible, in proportion to the cost of the agents used, but as cream of tartar is so high in price as to be excluded from use on any considerable scale, the best possible results are seldom obtained in actual practice. The ammonium salts, however, are, it is claimed, entirely neutral, and therefore are much less active, whereby they avoid the defects of the acids, and equal or excel in results the cream of tartar. Being very plentiful they are cheap and can be used where cream of tartar is barred.

IMPORTANCE OF THE CHEMIST.

In a very interesting paper entitled "The Chemist and the Community," Mr. Arthur D. Little shows that "few of the industries upon which the prosperity of the country and the comfort and material well-being of its inhabitants depend have not experienced within a generation changes so profound and so far-reaching in their effect as to be fairly described as revolutionary. It is within the truth to say that in the great majority of cases these changes have been initiated or accelerated by chemists. It is unnecessary, even if it were possible, to catalogue the materials for which, at prices permitting their general use, the community is indebted to the chemist. They comprise a large proportion of the things which are regarded as among the necessities of life, without which comfortable, or even decent, living would be impossible. With reference to productive industry generally it may be said that in many instances the chemist is the most effective agent for standardizing materials, controlling the course of processes, and minimizing wastes.

"The chemist has been similarly active in respect of matters pertaining to the public health. One has but to recall the splendid pioneer work in connection with the study of public water supplies in Massachusetts, work which is still regarded everywhere as the standard for other communities. The sanitary engineer cannot work without the chemist, the physician relies upon him for the most potent means for avoiding or arresting disease, or alleviating suffering, and domestic economy and science make increasing demands upon the laboratory.

"In no way has the communuity benefited more than through the 'diffusion of useful knowledge among men,' and few if any agencies for the diffusion of such knowledge have worked to better purpose than the Smithsonian Institution, which stands as an enduring monument to the wisdom and public spirit of Smithson, who was a chemist.

"There are perhaps as many as ten thousand chemists in the country; the census of 1900 gives 8,847, as contrasted with 125,000

lawyers and 93,000 doctors. In the light of these figures who shall say that the chemist has not borne his part as should the Happy Warrior in the fight against ignorance, material obstacles, and the phantasms of the mind?"

A DYEING JIGGER.

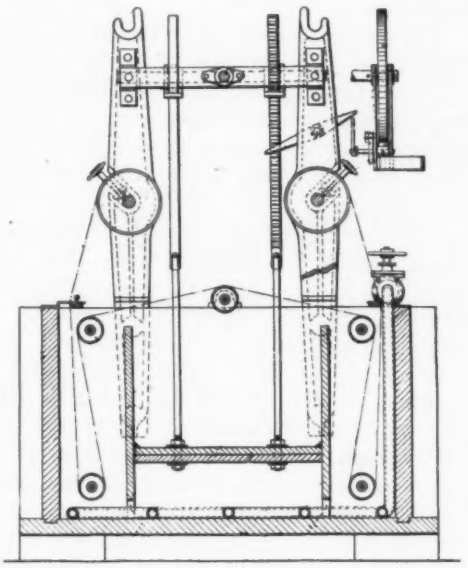
In the description of a dyeing jigger recently patented in this country the inventor states that for dyeing long pieces of cloth satisfactory results were first produced when the practice of adding the prepared dye liquor from the beginning onwards in the right quantity and strength for the particular piece to be dyed, to the jigger vat itself, was discontinued. Instead the dye bath previously made up in a special tank was gradually introduced from the beginning onwards in the empty or only partially filled jigger vat, while the cloth passed through at the same time with increasing velocity.

In practice it has been shown that the last mentioned process could be carried out to advantage when the vat serving for making up the dye-liquor stood on a platform and the jigger itself was erected on a lower level; the dye-liquor therefore flowed from the higher situated dye-liquor vats into the jigger vats situated lower down, spurted out of the perforated tubes on to the cloth running through the jigger and collected on the bottom of the jigger gradually filling the same. In order to make use of the weakened dye-liquor it was necessary to pump the dye-liquor back from the jigger vat into the higher situated reservoir; this was also the case when the dye-liquor run into the jigger vat turned out too weak and the dyed piece did not receive the right shade and had to be again passed through the jigger.

Besides these drawbacks and deficiencies, which result particularly in loss of time, material and wages, the high cost of manufacture of such installations has to be considered, the separate arrangement of the supplementary vat and the jigger takes up much space and a matter of great disadvantage in a dye-works, much light is lost owing to the raised position of the separate dye liquor vat. The new machine is a full-width dyeing machine constructed and working in the manner of the so-called jigger for uniformly dyeing cloth in which the entire dye liquor is introduced into the jigger vat, and the cloth during the whole operation dips equally deep into the bath.

The jigger vat is constructed so that the compartments containing the starting bath stand continually in communication with one another, but can also when desired be put into communication with the compartments for the compensating bath. This is of advantage when the total dye liquor is introduced or mixed.

The dye liquor is first introduced in a quantity corresponding to the length of cloth to be treated, and strength corresponding to the shade to be produced in the jigger vat itself, at which time all the compartments communicate with one another. Then a part of the cloth being dealt with is led through the compartments containing the starting bath,



dipping always to the same depth, and to this dye-liquor the compensating dye-liquor is gradually added from the other compartments.

About a third of the cloth which may have a length of 1,300 to 1,600 yards is run through the starting bath, and when the com-

pensating bath is introduced in such a manner that about a third of the latter is distributed during the forward passage of the last two-thirds of the length of cloth, and in the passage backwards the remaining two-thirds of the compensating bath is distributed over the whole length of cloth.

The illustration shows a section of a machine with three compartments, the middle one containing the compensating bath.

A great advantage claimed for the new jigger is that the cloth always dips equally deep into the dye bath during the whole operation which is not the case with the rising bath used in similar processes. The dyeing itself is therefore more uniform since the means usually available (acceleration or retardation of the passage) is not sufficient to equalize the difference in shade occurring in the piece of cloth with the rising bath owing to the varying depth to which the cloth dips. Since the jigger vat receives from the outset the whole dye bath, special separate vats are unnecessary.

The jiggers can stand on the level so that light from all sides may have free access. The installation of pumps for bringing back the dye-liquor into a higher vat is avoided. The construction makes it also possible to leave several jiggers under the control of one workman.

A further advantage claimed is that color can be added to strengthen the dye bath after the piece has once run completely through, without it being first necessary to pump the dye bath into a raised tank. In every case the dyeing of the cloth is said to be much more uniform and certain, even with materials which rapidly take the dye out of the bath such as wool, silk and half silk, than the processes hitherto employed. The cloth led through at first receives in the starting dye liquor a correspondingly deep shade. It is claimed that the dye liquor so weakened is during the further passage of the cloth strengthened by the introduction of compensating dye liquor in the same proportion in which its dye is taken out, so that the cloth is uniformly dyed. Since towards the end of the passage of the piece the cloth running at the end remains a shorter time in the dye liquor, a balance can be made either by letting the rollers rotate more slowly, or by running the cloth back again.

THE CONSTRUCTION OF BLEACH, DYE AND PRINT WORKS.

BY W. O. HARRAP.
In the Dyer and Calico Printer.

Few works in England can claim to be modern either in lay-out or equipment, although many attempts have been made by individual firms to effect improvements. Electricity for motive purposes has been introduced, old buildings have been replaced, and the machinery re-arranged, but the effect is only temporary and in many cases has resulted in failure. Notably is this the case where electricity has been tried for driving purposes, but the failures have not been due to the shortcomings of the electric drive as a system, but because the conditions were not favorable. It has become evident that to obtain the most satisfactory results and obtain the greatest all-round economy and efficiency a works must be designed as a complete whole, the buildings, power generating and distributing plant, machinery and the system, under which it will be operated, being so planned that they all combine to effect the greatest all-round economy.

This principle has been followed for many years in cotton-spinning mills which have now carried it almost to perfection. Engineering firms also have not been slow to adopt the system, and many of them have built themselves entirely new works at vast outlay, sooner than make only partially effective alteration. As a result of this policy, a distinctive type of building for each different trade has been evolved, and though there may be slight divergences between modern works engaged in the same class of business, there are fundamental principles underlying the correct design for any particular trade. It is evident that firms at present working under obsolete conditions, wishing to bring themselves into line must consider the advisability of building entirely new works, although existing works can be greatly improved by gradual rebuilding and the adop-

tion of the latest machines and methods.

The items into which cost of production may be sub-divided are interest, administration, rents, rates and taxes, labor, transport, maintenance, depreciation, power, materials and incidentals. All these are so linked together that a change made in one affects the others in a greater or lesser degree. Thus an increase in a particular item may cause decreases in several of the others, the total of gain more than counterbalancing the increase of expense. In considering the particular items, therefore, attention must be constantly fixed on the manner in which each one affects the others, and also the final result.

INTEREST.

Interest is the amount, fixed at a certain percentage, to be charged on the capital sum invested in the building and equipment of the works as a going concern. This charge can be kept down in two ways, the effects of which are totally different on the productive costs. In the first case the cheapest of everything, irrespective of quality, may be purchased so that even with a badly designed works the capital expenditure will not be high. In the second case by careful design so that the utmost is obtained for every penny expended, but without purchasing on first cost only, large reductions can be made as compared to an old-fashioned works of the same output, with the advantage that numerous savings will be obtained in the running expenses as will be shown later.

As regards the first case, although there is no economy in buying articles merely because they are cheap, it is just as foolish to think that because an appliance is high-priced it is necessarily better than a less expensive one. At the same time, high-class work demands a good price, but for some purposes it may be an advantage to purchase a cheap article, say for temporary use or where it would be used only occasionally.

Labor-saving devices form a capital charge, and as they generally require power to drive them this necessitates periodical attention and maintenance as well as a charge for depreciation. It must then be decided whether the actual saving in labor more than compensates for these charges.

TRANSPORT.

This charge is occasioned by the delivery of materials to the works and the carriage of goods sent out. The proximity to the markets from which the bulk of materials is obtained and also to an existing means of transit such as railway, canal, or the like, is the determinating factor, so that every effort should be made to select a site enjoying these advantages and suitable in other ways. Where the works are to be erected entirely new the freightage on all the materials required for the buildings and on the machinery and plant will total to a serious amount increasing the capital and therefore the interest charges. The interdependence of the charges is shown by the fact that by arranging for a branch line from a railway, or by the purchase of motor wagons the transport charges may be considerably reduced, although the interest charges are increased, and also the maintenance and depreciation accounts.

RENTS AND TAXES.

Rents are expenses entailed for the use of certain privileges, such as the occupation of land and buildings and for water rights, etc., but may be eliminated by purchasing these outright. As regards land and water this is a matter of choice, but as the buildings are to be put up new they will be the property of the firm. The design of the works cannot effect this item.

RATES.

Rates which are levied by the governing body of the district in which the works are situated vary to a great extent according to the locality. The business of a particular firm may demand a situation in or close to a large town where the rates are high, which is a case of foregoing one advantage to enjoy a greater, but in the majority of cases there will be no such restriction, so that a site where low rates rule will call for consideration.

LABOR.

The cost of labor is one of the most important, therefore, every effort should be made to keep the number of employes at a minimum. Cheap labor, like cheap machinery, is worth just as much as it costs, so that it is false economy to pay low wages solely for cheapness' sake. One of the great merits of properly designed works is that merely owing to its lay-out and organization a reduction is effected in labor with, at the same time, an increase in efficiency. While on this subject attention must be drawn to the fact that the best cannot be expected from a man if he is working in uncomfortable surroundings. Every effort should be made to produce conditions of working as favorable as possible. This is another case where correct design automatically produces improvement without adding to the expenses.

MAINTENANCE.

The cost entailed in keeping the buildings, plant and machinery in thorough working order, comes under this head. It is obvious that first-class articles will not require the same up-keep as poorer quality stuff, and owing to the elimination of a large amount of shafting, gearing, pipes and fittings and other causes the maintenance charge will be lower with the modern as against the old methods. The provision of a well fitted up engineers' department will have its effect on this charge by reducing the cost of carrying out repairs.

DEPRECIATION.

Depreciation is a charge on the whole undertaking. It is arbitrary, but it has for its object the setting aside of an annual sum for the replacing of appliances as they wear out. As up-to-date, high-class articles will last for a longer period than cheaper stuff, the depreciation percentage may be fixed at a lower figure when a good plant has been purchased in the first place. It does not always pay, however, to keep a machine until it is worn out. Something better may probably have been brought out in the meantime, but every case must be decided on its merits.

POWER.

The charge for power for this class of work is a heavy one, a slight percentage of saving obtained here and there aggregating an appreciable amount. The manner in which the power is generated and transmitted to the points required, affects this item. The price of fuel is the chief factor, which will be increased if the transport facilities are not favorable owing to higher freight charges on the coal. Therefore the system adopted for generating power should be the one which, while adapting itself with advantage to the transmission system selected, returns the greatest value in power per unit of fuel used. The different types of motor power generators will be considered later, but it must be kept in mind that it is by the arrangement of the power plant and its relation to the other machinery, the more economical use of power by more modern methods of transmission, the prevention of waste due to unnecessary steam pipes, shafts and gearing, that a certain saving may be looked for irrespective of the system of generation chosen.

MATERIALS.

Quantities of materials of various descriptions are used in the carrying on of the business, and a certain saving may be obtained by keeping them in proper stores where they can be checked, and by preventing waste through careless and improper use. Transport charges will likewise effect the cost of these to some extent.

ADMINISTRATION AND INCIDENTAL CHARGES.

The above charges comprise fixed salaries such as those of managers, chemists, foremen and office staff, together with materials used by the office and so on. These cannot be much influenced by the merely mechanical portion of the design, but form an important part of the organization.

GENERAL PRINCIPLES.

Turning now to the proposed design, there are certain general rules which must be stated before the various units can be discussed in detail.

1. The plan of the buildings and the ar-

rangement of the plant must be such that the goods under the treatment shall pass from process to process, from entering to leaving the works, with the least possible handling and without undue delays.

2. The design must allow for future extensions, and provide for these extensions being carried out with little trouble at the lowest cost and with little or no interference to the regular running of the older portions.

3. These extensions should be possible to any or all departments without throwing the whole scheme out of balance. This is a very important point and it is not practical to design works which will satisfy all the other conditions and not this one, for, immediately an addition is carried out a condition of things amounting to the old want of system is reconstituted. In fact, if every detail is thoroughly considered and carried out, future extensions should tend to increase the total efficiency.

4. The best use must be made of the ground occupied, due attention having been paid to the other rules set out. By this is meant that for the particular type of building found most suitable for certain purposes, as much space should be roofed in as possible with the least amount of materials and labor. A rectangular form accomplishes this. Irregular shaped buildings have nothing in their favor and should never be constructed unless it is for minor purpose.

5. The buildings should be fireproof as far as possible, while the risk of starting fires needs considering when arranging the machinery.

6. Ample natural light is required, but of a fairly consistent character, that is to say, the sun must not be able to play into the rooms when at its full strength for any length of time. The morning and evening sun does no harm, but, on the contrary, has an enlivening effect on the workers. A north light answers these requirements in every way.

7. The entrances require placing so that all goods, materials and employes entering or leaving the works can be thoroughly checked. In a large works it is advisable to have separate entrances for employes and goods, but in case of smaller works the timekeeper can check the materials passing through.

BLEACHING MERINO GOODS.

Editor Textile World Record:

I notice an inquiry by "Plain (959)" in your last issue for the best information on bleaching merino goods; that is, cotton and worsted mixed, the inquirer stating that he has used brimstone smoke, but that it takes away the proper feel; and that he has used peroxide, but that he considers it too expensive for his class of goods.

I, on my part, am convinced that the peroxide method is the only proper one to apply to mixtures of animal and vegetable fiber. Why? Because brimstone or sulphur smoke, or bisulphite of soda will necessarily carbonize the cotton more or less. Consequently the goods are weakened. Furthermore the white obtained is good only for a short time, after which it goes back on you. Therefore it is not a reliable and satisfactory bleach. Thirdly, there is a nasty smell left in the goods, which is the reverse of agreeable, or healthy, when such garments are worn next to the skin.

Now as to cost of the peroxide bleach. If this man says that the cost is too high, perhaps he is still working with peroxide of hydrogen instead of the much cheaper peroxide of sodium. The results are the same but the cost is cut down from 25 to 50 per cent. or more. That brings it down pretty close to a first class sulphur bleach, especially if "seconds," "go-backs" and the reputation of the house are considered. I, for my part, am satisfied to let the other fellow bleach with sulphur. The goods will be soft enough as to handle if finished in soap and if dried at a temperature of not more than 130° F.

Wide Awake.

The production of woven cotton goods in Bombay increased from 131,898,452 pounds in 1905-6 to 134,735,667 pounds in 1906-7.

The exports of raw cotton from Brazil in 1906 amounted to 12,825,010 pounds at an average price of 11 1/2 cents a pound.

AN AUTOMATIC MERCERIZING MACHINE FOR SKEIN YARN.

The Maschinenfabrik St. Georgen Commandit-Gesellschaft of St. Georgen, near St. Gall, Switzerland, have recently brought out a new machine for mercerizing which is described in "Uhlands Technische Rundschau" as follows:

The mercerizing process has been developed to a surprising extent during recent years and this machine is designed to meet the demands for an increased production and decreased cost for labor and materials. It requires less labor and power for its operation and a high and uniform luster is obtained on the yarn. From 3 to 4 h. p. is required to drive the machine and with one attendant a production of 1,100 to 1,600 pounds a day is obtained. It is claimed that the machine requires less caustic than is required with the methods now in general use.

Six pairs of rollers are set around the central shaft. One roller of each pair has a smooth surface; these smooth rollers are driven by a chain, while the other rollers are corrugated and driven by the skeins of yarn. Half the length of each roller is supported firmly by two bearings, while the other half projects so that the attendant can slip the skeins on and off. The corrugated rollers are connected with an adjustable tension lever by which the rollers of each pair are separated or brought together and the tension of the yarn regulated for skeins of different lengths. The driving mechanism at the side gives a rotary motion to the machine. A movement from one pair to another is effected in one minute, the machine making one-sixth of a revolution in that time. One complete revolution of the machine takes place in six minutes and requires six separate movements. The entire mechanism works automatically, no hand work being required other than putting the skeins on and removing them from the rollers. While one pair of rollers is being stripped and loaded the other five are in different stages of the mercerizing process. Following is the order of operations:

1. The rollers are loaded.
2. The yarn under ordinary tension is immersed in the mercerizing liquor.
3. The yarn remains in the mercerizing liquor, but under an increased tension.
4. The surplus liquor is squeezed from the yarn by rubber rolls, an extra tension of 1 per cent. being given to the yarn.
5. The yarn under an extra tension of 3 to 4 per cent. is rinsed in warm water.
6. The yarn under same tension is rinsed in cold water.

The next movement brings the skeins to the position from which they are removed, the entire process occupying six minutes.

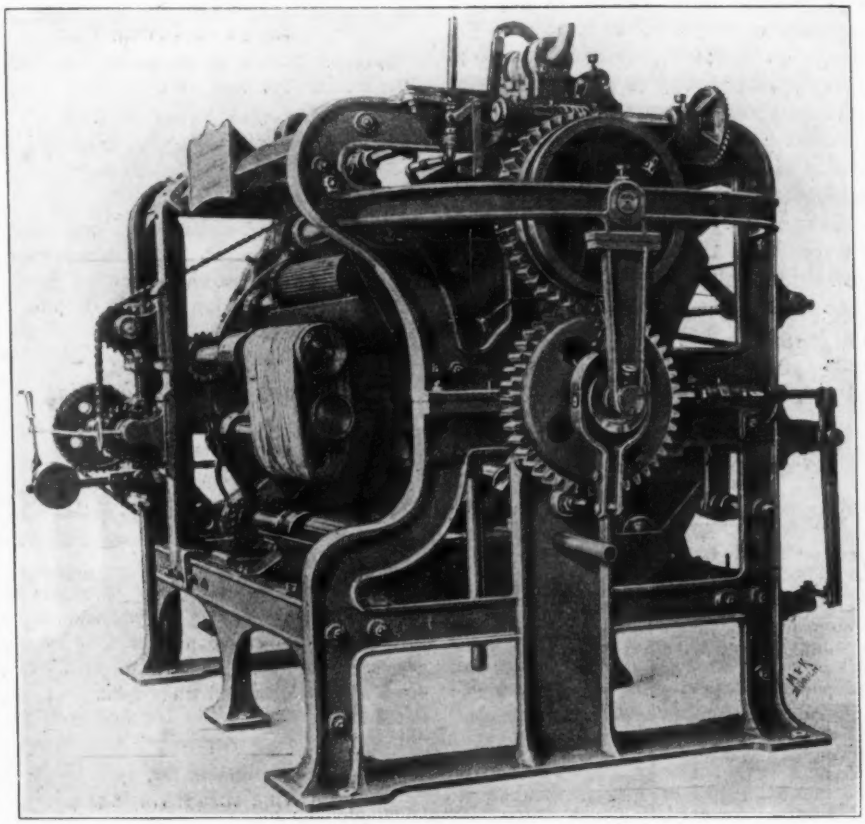
The mercerizing liquor is in a tank under the rollers. Two pair of rollers are immersed at the same time. In addition to this a new supply of liquor is forced on the yarn through perforated pipes. Under the two upper pair of rollers is a water tank for collecting and disposing of the waste water. The hot and cold water supply pipes are placed above these upper rollers. While the machine is making its sixth advance these supply pipes close automatically and open as soon as the movement is completed and the rollers begin to revolve in order to turn the yarn.

The upper tank is divided into two parts, one for cold and the other for hot water. The yarn after squeezing and when entering the warm water contains more or less mercerizing liquor which is quickly removed when the skeins begin to revolve. It is at this time that the greater part of the chemicals are washed away, leaving but a small quantity in the yarn. The waste liquor that comes from the skeins at this time and contains the larger part of the alkali is carried to the storage tank by a pipe running from the hot water tank. After the first revolution of the skein is completed this pipe is closed automatically and the rest of the waste water flows into the drain.

The waste liquor from this storage tank is run into the lower or soaking tank, reducing the quantity of alkali in order to keep the liquor to the required strength.

The new alkali liquor is stored in a tank above the machine and flows through a tank to the perforated rollers already mentioned.

The overflow from the soaking tank is pumped automatically to the storage tank above. This continuous circulation keeps the strength and temperature of the liquor uniform. Each pair of rollers is loaded with 2 1/5 pounds of yarn, which is the production of the machine per minute. All other operations of the machine, such as immersion, squeezing, warm water rinsing, cold rinsing, tension, circulation of the water, finishing movements of the machine, etc., are automatic. The main parts of the machine are all made of steel. The machine occupies floor space 10 ft., 5 in., by 7 ft., 6 in., and is 7 ft., 6 in. high. The storage tank occupies an area of 11 sq. ft. Machine and tank weigh 21,800 lbs.; the machine alone, 20,400 lbs.



AN AUTOMATIC MERCERIZING MACHINE.

The builders state that this machine supplies certain deficiencies in the present methods, particularly in the case of the lower grades of cotton, which by this method acquire not only a much higher luster but greater affinity for dyestuffs than has hitherto been obtainable. The cotton fiber under the microscope is seen to be a spiral ribbon; when mercerized it appears in the form of a tube, the outer covering having disappeared because of the tension, leaving the central fiber bare. This change makes the fiber transparent, the lustre being increased when the fibers are placed parallel. The builders of the St. Georgen machine claim that their process is especially effective in removing this outer covering and increasing the luster.

For mercerizing on this machine the yarn is no longer boiled out, but previous to mer-

cerizing is handled cold, the result being a transformation of the cotton fiber into hydrocellose without shrinkage. The yarn is free from fats, resin and other foreign materials. Previous to mercerizing the yarn is subjected to a chemical treatment in addition to a cleansing process. The advantages are better realized in the subsequent process of mercerizing. If, for example, a prepared yarn is subjected to a 28° to 30° mercerizing liquor, this liquor is not only absorbed very quickly, but is easily removed during the washing process, giving a high luster. It has been found that nearly all of the mercerizing liquor in the yarn can be removed in the washing process during the first revolution of the skein.

It is stated that the yarn mercerized by this process takes the dye evenly. The yarn to be mercerized is placed in a tank which is then filled with the preparing liquor and left over night. Next morning it is extracted and is then ready for mercerizing.

Color Cards.

Thiogene Green G; H. A. Metz & Co., New York.
Sample card showing samples of yarn and cotton goods dyed with Thiogene Green G and giving dyeing directions.

Thioxin Indigo B; Geisenheimer & Co., New York.
Fifteen samples of cotton and silk yarn, cotton piece goods and raw cotton, dyed with Thioxin Indigo B and which show very good fastness to acids, light and cross dyeing.

Shades on Woolen Yarns: Farbenfabriken & Co., New York.
An elaborate book having a large number of samples of woolen yarn dyed in a wide variety of shades.

Thioxinbraun R; Geinsenheimer & Co., New York.
Sample card showing five samples of cotton and silk yarn dyed with Thioxine Brown R.

Shades on Worsted and Woolen Yarn; Read, Holliday & Sons, New York.
A folder having 108 samples of woolen and worsted yarn dyed with a wide variety of shades and giving directions.

Benzidine Colors on Cotton Piece Goods; Farbenfabriken & Co., New York.
A bound book showing a number of samples of cotton piece goods dyed with different varieties of shades.

DYE RECIPES.

The following recipes appear in the Dyers' Supplement, which is issued each month by the TEXTILE WORLD RECORD. The Supplement contains the colored samples, dyed according to recipes given. The selection of samples is carefully made, and it is the aim to show shades which are of especial interest to the dyer, and which the requirements of the market demand. The Dyers' Supplement is a 16-page pamphlet, in convenient form for preservation. Subscription price for the Dyers' Supplement $1.00 per year.

Recipe No. 33.

Brown on Cotton Yarn.

Diamine Brown M R on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Diamine Brown M R.
(Cassella Color Co., 182 Front St., New York.)
1 lb. Soda Ash.
20 lbs. Glauber's Salt.

Enter at 180° F. and dye at a boil for one hour.

Diamine Brown M R produces an excellent shade of reddish brown possessing good fastness to most of the common color destroying agencies.

Recipe No. 34.

Pink on Worsted Yarn.

Brilliant Kiton Red B on 100 lbs. worsted yarn. Prepare the dye bath with

½ lb. Brilliant Kiton Red B.
(A. Klipstein & Co., 122 Pearl St., New York.)
10 lbs. Glauber's Salt.
3-5 lbs. Sulphuric Acid.

Enter at 180° F. and dye at a boil for one hour.

Brilliant Kiton Red B is very suitable either for the dyeing of wool in the form of yarn or piece goods. It does not stain cotton yarn. It will also be found valuable in the dyeing of compound shades.

Recipe No. 35.

Blue on Cotton Yarn.

Diamine Bengal Blue G on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Diamine Bengal Blue G.
(Cassella Color Co., 182 Front St., New York.)
1 lb. Soda Ash.
20 lbs. Glauber's Salt.

Enter at 180° F. and dye at a boil for one hour.

Diamine Bengal Blue G possesses the property of exhausting excellently as compared with most of the direct cotton colors. It is therefore well suited for producing dark shades on loose cotton, yarn and piece goods.

Its fastness is fully as good as the average direct cotton color.

Recipe No. 36.

Scarlet on Cotton Yarn.

Tetrazo Scarlet F on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Tetrazo Scarlet F.
(American Dyewood Co. 154 William St., New York.)
25 lbs. Common Salt.

Enter at 180° F. and dye at a boil for one hour.

Tetrazo Scarlet F possesses good fastness to light and washing.

Recipe No. 37.

Red on Cotton Yarn.

Tetrazo Red 10 B on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Tetrazo Red 10 B.
(American Dyewood Co., 154 William St., New York.)
2 lbs. Soda Crystals.
25 lbs. Common Salt.

Enter at 180° F. and dye at a boil for one hour.

Tetrazo Red 10 B is recommended for pure bluish red shades, and may be used in union dyeing as the cotton and wool are colored equally.

Recipe No. 38.

Black on Worsted Yarn.

Alphanol Black R on 100 lbs. worsted yarn. Prepare the dye bath with

4 lbs. Alphanol Black R.
(Cassella Color Co., 182 Front St., New York.)
10 lbs. Glauber's Salt.
5 lbs. Acetic Acid.

Enter the yarn at 105° F., raise to a boil in 1/2 hour, and then boil for one hour, finally adding a little acetic acid, if necessary, to exhaust the dye bath.

Alphanol Black R dyes very evenly, and produces an excellent shade of black which will be particularly desirable for dyeing dress goods and serges.

Recipe No. 39.

Red on Worsted Yarn.

Anthra Alizarine Carmoisine on 100 lbs. worsted yarn. Prepare the dye bath with

4 lbs. Anthra Alizarine Carmoisine.
(F. E. Atteaux & Co., 174 Purchase St., Boston, Mass.)
4 lbs. Acetic Acid.
10 lbs. Glauber's Salt.

Enter yarn in bath at 120° F. and bring bath slowly to a boil. Boil 1/2 hour, and then add

1 lb. Sulphuric Acid

to exhaust the dye bath and boil 1/2 hour longer. Cool the bath to 120° F. and add

2 lbs. Potassium Bichromate.

Bring to the boil again and boil 1/2 hour.

Anthra Alizarine Carmoisine, like most of the other mordant acid colors, possesses excellent fastness.

Recipe No. 40.

Green on Cotton Yarn.

Oxamine Green G on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Oxamine Green G.
(Badische Company, 128 Duane St., New York.)
25 lbs. Common Salt.

Enter yarn at 180° F. and dye at a boil for one hour.

Oxamine Green G possesses the characteristic properties of the average direct cotton color.

Recipe No. 41.

Green on Cotton Yarn.

Oxamine Green B on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Oxamine Green B.
(Badische Company, 128 Duane St., New York.)
25 lbs. Common Salt.

Enter at 180° F. and dye at a boil for one hour.

Oxamine Green B possesses the characteristic properties of the average direct cotton color.

Recipe No. 42.

Yellow on Worsted Yarn.

Alizarine Yellow G on 100 lbs. worsted yarn. Prepare the dye bath with

4 lbs. Alizarine Yellow G.
(F. E. Atteaux & Co., 174 Purchase St., Boston, Mass.)
4 lbs. Acetic Acid.
10 lbs. Glauber's Salt.

Enter yarn in bath at 120° F. and bring slowly to a boil. Boil 1/2 hour, then add

1 lb. Sulphuric Acid

to exhaust the dye bath and boil 1/2 hour longer. Cool the bath to 120° F. and add

2 lbs. Potassium Bichromate.

Bring to the boil again and boil 1/2 hour.

Alizarine Yellow G, like most of the other mordant acid colors, possesses excellent fastness.

Recipe No. 43.

Blue on Cotton Yarn.

Pyrol Blue R Conc. on 100 lbs. cotton yarn. Prepare the dye bath with

10 lbs. Pyrol Blue R Conc.
(C. Bischoff & Co., 451 Washington St., New York.)
20 lbs. Sodium Sulphide Crystals.
50 lbs. Common Salt.
5 lbs. Soda Ash.

Boil up the dye bath, cool slightly, enter yarn and dye just below the boil for one hour.

Pyrol Blue R Conc. possesses the valuable properties of similar dyestuffs of this class.

Recipe No. 44.

Pink on Worsted Yarn.

Fast Acid Rhodamine B on 100 lbs. worsted yarn. Prepare the dye bath with

2 lbs. Fast Acid Rhodamine B.
(F. E. Atteaux & Co., 176 Purchase St., Boston, Mass.)
4 lbs. Sulphuric Acid.

Enter at 160° F. and dye at a boil for one hour.

No Glauber's salt is used in its application.

Fast Acid Rhodamine B is especially interesting as a shading color as it dyes very evenly at a boil, especially on piece goods.

Recipe No. 45.

Black on Worsted Yarn.

Naphtogene Black 4 B on 100 lbs. worsted yarn. Prepare the dye bath with

8 lbs. Naphtogene Black 4 B.
(Read Holliday & Sons, 7 Platt St., New York.)
3 lbs. Sulphuric Acid.
250 gals. Water.

Enter yarn cold and raise to boil and continue boiling until bath is exhausted.

Naphtogene Black 4 B possesses very good fastness to light, stoving and acids

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Recipe No. 46.

Brown on Cotton Yarn.

Zambesi Brown 4 R on 100 lbs. cotton yarn. Prepare the dye bath with

4 lbs. Zambesi Brown 4 R.
(Berlin Aniline Works, 213 Water St., New York.)
20 lbs. Glauber's Salt (Calcined).
1 lb. Soda Ash.

Enter material at 180° F. and dye at a boil for one hour. Rinse and diazotize for 1/2 hour in a cold bath made up with

3 lbs. Sodium Nitrite.
8 lbs. Sulphuric Acid 168° Tw.

Rinse, and work for 1/2 hour in a cold bath made up with

1¼ lbs. Beta Naphthol,

previously dissolved in

1¼ lbs. Caustic Soda Lye 76° Tw.

Then wash thoroughly.

Zambesi Brown 4 R when applied in the above manner produces an excellent shade of reddish brown possessing good fastness to washing, alkalies and also fairly good fastness to light, boiling water and acid cross dyeing.

Recipe No. 47.

Blue on Worsted Yarn.

Disulphine Blue G on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Disulphine Blue G.
(Read Holliday & Sons, 7 Platt St., New York.)
3 lbs. Sulphuric Acid.
250 gals. Water.

Enter yarn cold and raise to boil and continue boiling until bath is exhausted.

Disulphine Blue G possesses good fastness to light, acids and washing.

Recipe No. 48.

Red on Cotton Yarn.

Tetrazo Red 12 B on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Tetrazo Red 12 B.
(American Dyewood Co., 154 William St., New York.)
2 lbs. Soda Crystals.
25 lbs. Common Salt.

Enter at 180° F. and dye at a boil for one hour.

Tetrazo Red 12 B is especially recommended for dyeing brilliant bluish reds. It may be used in union dyeing as the cotton and wool are colored equally.

It is of very good fastness to light and acids and is especially adapted for the dyeing of artificial silk.

Mill News.

Those interested in receiving early and more complete investigated information of projected new mills, enlargements, improvements, fires facts and gossip of the trade are referred to the Textile Advance News, issued weekly by the publishers of the Textile World Record, at $15.00 per year.

COTTON.

New Mills.

*Alabama, Butler Springs. The Marble City Mills has completed the construction of buildings. The character of the product has not been decided upon and no contracts have been awarded for machinery. We reported this project in October. M. B. Lewis, Birmingham, Ala., is sec. and treas.

*Alabama, Munford. Manufacturing operations will begin in the new Munford Cotton Mills about the last of March. The building is rapidly nearing completion and all arrangements have been completed for machinery equipment. 2,500 spindles will be installed for manufacturing 14s to 26s hosiery yarns. The Munford Cotton Mills has capital stock of $50,000. N. C. Camp is pres., D. B. Harris, vice-pres., and B. F. Camp, sec'y and treas.

*Georgia, Albany. The report that J. E. Sirrine of Greenville, S. C., had been engaged as architect and engineer for the proposed cotton mill, is incorrect, as the organization of the company has not reached the stage where an engineer is needed. Plans have been submitted by four engineers. The major portion of the stock has been subscribed, but the promoters intend to complete a subscription which will permit the erection of a mill of from 8,000 to 10,000 spindles and a number of looms. The only definite information which can be given out is that the subscription will probably be completed and the company organized and incorporated within 60 days. Those in charge of this enterprise are John A. Betjeman, chairman, A. P. Vason and C. W. Rawson, all of this place.

*Georgia, Ashburn. The stockholders of the Shingler Cotton Mills will meet within a few weeks and decide upon plans for buildings and engage architect and engineer. J. S. Shingler is president of this company. 10,000 spindles and 300 looms will be operated.

*Georgia, Ballground. The Ballground Cotton Mills, which we reported as forming an organization to build a cotton mill, last December, has awarded contract to S. L. Clay & Co., Cedartown, Ga., for the construction of buildings for the proposed plant. The equipment as previously reported will be 10,000 spindles and 200 looms for manufacturing denims and duck. The buildings will be as follows: Main mill, 2 stories high, 75 by 320 ft., picker house 32 by 75 ft., dye house 75 by 90 ft., engine and boiler rooms 40 by 40 ft. A. J. Lovelady is president and Frederick A. Abbott, general manager and superintendent.

*Georgia, Jesup. It is stated that construction work on the buildings proposed for the Goose Creek Railway & Power Mfg. Co. will begin within 30 days. No materials or machinery have been purchased. In addition to W. H. Whaley, president of the Merchants' & Farmers' Bank, the following men are interested: F. E. Breen, secretary and treasurer of the Alabama Navigation Co., J. F. Breen, W. M. Robinson, J. T. Winn, A. L. Kicklighter, E. Crumney and D. M. Clark, all of Jesup. As reported last week, D. G. Ziegler of Columbia, S. C., is preparing plans.

*Georgia, Manchester. Fuller E. Callaway, treasurer of the Unity Cotton Mills of La Grange, Ga., and also treasurer of the Manchester Development Co. which is promoting the proposed $500,000 cotton mill, advises that while the enterprise is assured, it has not passed the preliminary stage. The original plan to perfect organization in December was abandoned on account of financial conditions. It is expected now that organization will be perfected within 60 to 90 days and construction work begun early in the summer of 1908. No details regarding the building or equipment plans can be given out at this time. The interests that are operating the Unity Cotton Mills and Elm City Cotton Mills of La Grange and the Milstead Mfg. Co. of Conyers, Ga., are promoting this enterprise.

*North Carolina, Kinston. The Caswell Cotton Mills, incorporated, has secured a tract of 15 acres on the Neuse River and construction work will commence about March 15, as previously reported. The main structure will be 80 by 200 feet. Complete details of this company have been given previously.

North Carolina, Landis. A company is being organized for the purpose of building a new cotton mill. The capital stock will be $100,000. E. G. Mills was at the head of the project.

*North Carolina, Weldon. Construction work on the buildings for the Shaw Cotton Mills, Inc., has started. This company has a capital stock of $100,000 and will operate 5,000 spindles on 20's to 30's cotton yarns.

*Rhode Island, River Point. The first of the lace machines being imported from Nottingham, England, for the Warwick Lace Works, have arrived and is being set up. It is stated that it will be only a matter of a few weeks when the plant will be running in full.

*South Carolina, Charleston. No further details of the Carolina Waste Co., reported incorporated in November with capital stock of $200,000, have been given out. The promoters are busy securing subscriptions and completing details of buildings and equipment.

*South Carolina, Gaffney. Two or three months will be required before the Merrimac Mills are ready for manufacturing. Nothing has been done toward installing machinery and no power is obtainable from the electric power company owing

to delay in development of the latter. The name of this company will be changed as a result of the suit brought by the Merrimack Mfg. Company of Lowell, Mass.

*South Carolina, Rock Hill. The new cotton mill which we have reported from time to time as the Wymojo Cotton Mills will be known as the Wymojo Yarn Mills, the change of title having been agreed upon by the stockholders. As previouly reported, construction work has commenced on a plant and manufacturing will begin during August or September. 20s to 2/30s lace curtain yarns will be the product. Compete details including officers of this company have been given.

*Texas, Colorado. The organization of a company to build a cotton mill is in a preliminary stage. Nothing definite has been decided upon as regards the size of the mill or the product. A committee will shortly be appointed to investigate and decide upon the best plans to pursue.

Enlargements and Improvements.

*Alabama, Huntsville. The Abingdon Mills are reported as contemplating the installation of a number of spinning frames. T. W. Pratt is treasurer, agent and buyer. 20,000 ring spindles and 500 looms are operated on duck.

Alabama, Oxford. The Planters' Mfg. Co. is preparing to largely increase the capacity of the plant and some reports state that equipment is to be trebled. Rope, braided sash cloth, batting and twines are manufactured. Wm. B. Bailey is president and N. S. Perkins, manager.

Connecticut, Danielson. The Quinebaug Co. is installing a warp tying machine.

Connecticut, North Grosvenordale. The Grosvenordale Company is having a number of new Saco & Pettee cards installed, taking advantage of the brief let-up in the demand for their goods. Sheetings and sateens are manufactured on 82,448 ring and 38,400 mule spindles and 3,617 looms. A. H. Tillinghast is president and treasurer; C. S. Anden is agent and buyer for supplies and machinery.

*Connecticut, Westport. The Lees Mfg. Co. has completed the installation of new machinery mentioned last month.

Georgia, Dallas. The Dallas Cotton Mills is to be driven by electricity furnished by the Paulding County Electric Co., which is establishing a complete hydro-electric plant furnished by the Davis Foundry & Machine Co. of Rome, Ga.

*Maine, Saco. The installing machinery in the new mill erected for the York Mfg. Co. has commenced and it is expected that the complete equipment will be installed and running in about 6 weeks. The Saco & Pettee Machine Co. is furnishing carding and spinning machinery.

*Massachusetts, Adams. The report that the Renfrew Mfg. Co. had ordered 40 new jacquard looms is incorrect. They are simply changing 40 624-hook jacquards to 1248-hook heads. No new looms are being installed.

Massachusetts, Amesbury. The Hamilton Woolen Co. will shut down Feb. 10 for one week in order to make needed repairs and add a quantity of new machinery. The Hamilton Woolen Co. has capital stock of $1,000,000 and operates 63,000 ring spindles and 1,800 looms on prints and sheetings. C. A. Coleman, Boston, is treasurer and F. J. Quinn, agent.

*Massachusetts, Great Barrington. An amendment to its charter has been filed by the Edgemere Mfg. Co. to increase the capital stock from $25,000 to $100,000. This company recently bought a building suitable for manufacturing and stated that the equipment would probably be increased in the near future. J. M. O'Brien is superintendent and buyer and W. N. Greenwood is president. Marseilles and crochet quilts, Turkish towels and similar goods are manufactured.

Massachusetts, Lowell. The Merrimack Mfg. Co. has had plans prepared for an addition to its plant. The new building will be a 2-story fireproof structure of concrete construction and will cost about $10,000. Dimensions will be 100 by 42 ft. and about 27 ft. high. The Eastern Concrete Construction Co. of Boston, has been awarded the building contract.

Massachusetts, Waltham. 12 new spinning frames of 272 spindles each are being set up in the plant of the Boston Mfg. Co.

Massachusetts, Westfield. The plant of the Wm. Warren Thread Works closed 2 days to have the plumbing and heating arrangement thoroughly overhauled. The plant is running as usual with a full force.

*New York, LeRoy. A force of men is at work tearing down the old malt house to make room for the new addition to be erected for the LeRoy Cotton Mills. It has been given out that the new addition will be equipped with looms. At present yarn only is manufactured. At a meeting of the stockholders to be held on February 28, the question of increasing the capital stock from $450,000 to $750,000 will be voted upon.

North Carolina, High Shoals. The High Shoals Co. will change over to electric power, electricity being supplied by the Southern Power Co. Contracts have been awarded for necessary equipment. It is also reported that additional machinery will shortly be contracted for.

*North Carolina, Wake Forest. Machinery in the addition to the Royall Cotton Mills is being operated. The new equipment consists of 9,000 ring spindles, 3,360 twisting spindles and 29-40 inch cards. W. C. Powell is pres., R. E. Royall is treas. and agent, and George H. Greason, supt.

*Rhode Island, Woonsocket. The progress made on the construction of the new mill for the Lawton Spinning Co. will allow the installation of machinery during March.

*South Carolina, Gaffney. The Gaffney Mfg. Co. has taken no action toward installing additional machinery as proposed. Space has been prepared and the increase may be arranged for later in the year.

Virginia, Danville. The Dan River Power & Mfg. Company is increasing its capital stock from $2,500,000 to $3,000,000. It is reported that further enlargement is contemplated. 300 Northrop looms were added last November.

Mills Shutting Down.

Massachusetts, New Bedford. The Acushnet Mill Corp. will shut down this week for a period of two weeks. While the curtailment has been accomplished in other mills by closing one or two days a week, the Acushnet has been running full time as a complete stoppage was necessary to make repairs.

WOOLEN.

New Mills.

*Massachusetts, Lawrence. The new plant being started by Joshua D. Armitage and F. A. Sterling will be known as J. D. Armitage & Co. 24 looms will be installed for the manufacture of fancy worsted dress goods. Mr. Armitage will attend to the technical end of the business and Mr. Sterling to the financial part. Worsted yarns will be bought. If present plans are carried out, manufacturing will begin during April.

*Michigan, Kalamazoo. The Kalamazoo Blanket Co. is making a line of samples and it is reported will be running in full in a short time. Blankets and kersey linings will be manufactured.

*Rhode Island, Woonsocket. The new mill erected for DeSurmont & Co. is in operation. Full particulars of this plant have been given previously.

Enlargements and Improvements.

*Connecticut, Central Village. Construction work on the proposed addition to the Central Worsted Co. will begin as soon as weather permits. In January the capital stock was increased from $50,000 to $75,000. George O. Mawhinney is president. Men's wear, worsteds and cotton worsteds are manufactured on 30 looms.

*Connecticut, Norwich. A brick addition 40 by 60 ft. and one story high has just been completed at the plant of Hall Brothers. Wet finishing machinery is being installed.

Connecticut, Stafford Springs. A large water tower and tank to be used by the Rhode Island Worsted Company has arrived. It will be set up as soon as possible.

Connecticut, Torrington. The Warrenton Woolen Co. has decided to start construction work in the spring on the new building which we reported in August would be erected by them. The structure will be 300 by 80 ft., 2 stories high, also a dye house, wool store house and boiler house. All the buildings will be of brick construction with concrete floors and roof. The Warrenton Co. has capital stock of $50,000 and operates 6 sets and 20 broad looms on indigo blue uniform cloths. S. C. Workman is manager and buyer.

*Massachusetts, Athol. The new building erected for W. H. Kauffman to replace the one destroyed by fire on Dec. 6 is completed and new machinery is being set up. As previosuly reported, manufacturing will be resumed Feb. 10. Satinets and blankets are the product. 18s to 20s cotton warp yarns are bought.

*Massachusetts, Holyoke. The Farr Alpaca Co. advises that instead of replacing the old weaveshed with new building, the old building is being repaired by laying new floors and making repairs to the roof. Report that an addition was planned for the near future is incorrect. In addition to repairs on the buildings, the machinery is being overhauled generally.

*Massachusetts, Lowell. Every department of the Middlesex Co.'s plant is being overhauled and as we reported previously, new machinery installed. The company is preparing for an extended business on their special lines of goods. 50 sets and 225 broad looms are operated.

*Massachusetts, Lowell. The J. W. Bishop Co. has sublet the contract for excavating for the cellar of the new mill for the Bigelow Carpet Co. to Cleveland Sullivan.

Massachusetts, Middleboro. The Nemasket Mills have added a new Hopkins Fulling Mill to their wet finishing department.

*Massachusetts, Southbridge. A force of men are installing shafting in the new mill erected for the Central Mills Co. Machinery for the new addition will be ready for manufacturing shortly.

Minnesota, Minneapolis. The North Star Woolen Mill Company is building a new flume and making extensive repairs. The plant is driven by water power. They dye, raw stock and piece, and finish.

New Mexico, Albuquerque. The Albuquerque Wool Scouring Mills are having a new boiler house erected, and it is reported, will make further repairs embracing the remodelling of the entire plant and about doubling the capacity.

Oregon, Eugene. The Eugene Woolen Mill Co. has shut down to allow the installation of a new boiler. Blankets, flannels and robes are manufactured on 3 sets and 24 looms. T. B. Kay is president and buyer, and T. L. Chambers, treasurer. The plant is operated by water and steam power.

Pennsylvania, Philadelphia. Messrs. William Scholes & Sons have recently contracted for the erection of a brick tower and fire escape as an addition to their mill on 2d St., below Indiana Ave., where they manufacture woolen and worsted yarns on 14 woolen sets, 3 worsted cards and 6 combs, selling the production direct.

Pennsylvania, Philadelphia. The Germania Worsted Mills, Indiana Ave. and A St., have engaged 50 looms operated by commission weavers to help manufacture goods for their orders. 150 broad looms in the Germania plant are being operated to full capacity on worsted dress goods. 2/10s to 2/80s worsted yarns are bought. Otto Stoeckel is buyer.

*Pennsylvania, Philadelphia. Thomas Henry & Sons, proprietors of the Tioga Mills reported last

week destroyed by fire, with loss of $150,000 to $200,000, have given the contract of reconstructing the building to Wm. Steele & Sons Co. Owing to there being valuable machinery on the lower floors of the plant and it being necessary to take immediate steps to have the building reconstructed in the least possible time, the work will commence at once.

Pennsylvania, Philadelphia. The Philadelphia Axminster Carpet Co., Fretz Building, operating 30 looms on Axminster carpets, have recently leased the entire floor on which they are located and put in 20 additional looms. The company has a capital of $50,000. George Flint is pres.; and John Thomson, Sr., sec., treas. and supt.

Pennsylvania, Philadelphia. W. A. Gardner, Somerset & Boudinot Sts., who has been manufacturing shawls and dress goods on 24 looms, has recently increased his equipment by the purchase of 10 more broad looms and is now working on dress goods and men's wear only, selling direct.

Rhode Island, Tarkiln. The Oak Valley Mills have installed a new Hopkins washer.

Rhode Island, Thornton. It is reported that plans are being made for a large addition to the plant of the Victoria Mills and that another story will be added to the main building. This cannot be stated as a fact but the Victoria Mills have been unusually prosperous during the past few months. Harry Hartley, 275 Congress St., Boston, Mass., is proprietor.

Wisconsin, Beaver Dam. The Beaver Dam Mills have added another set of cards, making 5 sets now operated.

Mills Starting Up.

Massachusetts, Pittsfield. The dye house of J. L. & T. D Peck Mfg. Co., upper mill, has resumed after a shut-down lasting since the middle of last November. The starting of the dye house is preparatory to opening all the departments and full equipment of 300 hands will be given employment in a week or two.

New Jersey, Gloucester. The Fries-Harlev Co., whose mills have been shut down since December last, report that they will again resume operations at once, having orders on hand enough to enable them to start up full time and give employment to about 400 hands. They are manufacturers of carpets and rugs on 70 looms; also operate a dye and finishing plant for their own use.

*Pennsylvania, Chambersburg. The receivers for the Chambersburg Woolen Co. have resumed operations at the plant. All the stock on hand will be made into goods, which will keep the plant going for some time. Further instructions will probably be received before the stock is all run out.

Vermont, Winooski. The Burlington Mill (American Woolen Co.), which has been shut down since the latter part of December, has resumed operations in part, giving employment to 700 hands. It is stated that the full equipment of 26 sets and 602 broad looms will be run shortly, giving employment to the full equipment of 1,600 operatives.

West Virginia, Webster. The Webster Woolen Mills Co. has resumed manufacturing after a shut down lasting one month. During the suspension of operations repairs were made to the machinery and building.

SILK.

New Mills.

*New Jersey, Paterson. The new mill for the United Ribbon Co. on which work has begun for foundations, will be 200 by 38 feet, 3 stories high, with separate boiler and engine houses. Building will be of brick, steel and cement and will be as near fireproof as it is possible to make it.

*Pennsylvania, Hazleton. The capital stock of the Spillman Silk Mfg. Co. is $10,000 instead of $100,000 as previously reported. No report can be made as yet as nothing has been done so far but secure charter. Details of the plant and the location have not been decided upon. H. G. Spillman and A. T. McAllister of this city and H. C. Eastburn and T. J. Bowen of Wilmington are the incorporators.

Pennsylvania, Lehighton. A new silk mill is being started by Howard A. Diffderfer. Space has been secured and machinery contracted for.

*Rhode Island, Westerly. The reorganization of the Westerly Silk Mill Co., which we reported would occur, is complete, and the company will hereafter be known as the Westerly Silk Company. The new company has a capital stock of $16,000 and the following officers; H. K. Washburn, pres.; E. E. Bradley, treas.; and W. A. Washburn, supt. and buyer. The equipment is given as 5,000 spindles. H. K. and W. A. Washburn were formerly of the firm of A. Washburn & Sons, So. Coventry, Conn. The plant is operated by steam power.

Enlargements and Improvements.

New Jersey, Paterson. Robert E. Muller & Co. are installing ribbon looms in the Todd mill, recently purchased by them as previously reported. When the weather permits, building operations will begin on their proposed new mill adjoining the Todd building.

New Jersey, Paterson. The Miller Throwing Co operating 400 spindles on East 23d St., has been purchased by the Lake View Silk Mills. Manufacturing will be continued in the old plant under the name of the East Side Throwing Mills. The office is at 64 Ryle Ave.

New Jersey, Paterson. The H. F. Danner Textile Co., Spruce St., is adding a number of ribbon looms and making other improvements for increasing the output of the plant.

*New Jersey, Paterson. Since the acquisition of the Kutztown Silk Mill, Kutztown, Pa., the Hill Silk Mfg. Company has a total of 270 looms. 140 of these are at the Paterson plant and 130 at Kutztown. Dress goods are manufactured, the product being sold through F. A. Byron & Company, N. Y. Wm. G. Hill is president and John W. Nowell, secretary and treasurer.

New Jersey, Paterson. A. & M. Levy are removing the Metropolitan Ribbon Co. which they control to their new mill on Tatowa Avenue.

New Jersey, Paterson. It is reported that the Union Ribbon Company has leased the space in the Harmony Mill lately occupied by the Metropolitan Company.

*Pennsylvania, Allentown. The roof is now being put on the new building erected for Kaltenbach & Stephens by the Kasch Roofing Co., Akron, O., and the heating system is being installed. The new building will hold 170 looms. Ground was broken a few days ago for an addition to the power plant, which is necessary to take care of the increase in the number of looms. The local plant is a branch of Kaltenbach & Stephens, 127-137 North Tenth St., Brooklyn, N. Y.

*Pennsylvania, Hazleton. Messrs. Ballinger & Perot, architects and engineers located in Philadelphia, have been commissioned to prepare plans, as previously reported by us, and will shortly invite estimates for a large addition to the mills of the Duplan Silk Co. The building will have a frontage on Diamond St. of 200 feet with a depth of 300 feet, which will enable them to double the capacity of their present plant and give employment to about 300 hands in addition to their present working force, which numbers about 500. A portion of the building will be 50 by 160 feet, two stories and basement, which will have floors of reinforced concrete and walls of brick. The first and second floors will be especially arranged as lunch and comfort rooms for the employes. The remainder of the building will be one story in height, with roof of saw teeth construction which will enable them to obtain the best light, and will be used by the company for the weaving of silk. The walls will be of brick and the roof of timber construction.

Pennsylvania, Philadelphia. The Keystone Silk Weaving Co., Ltd., have recently removed their plant, in which they manufacture silk woven labels, silk belts, shoe toppings and ribbons on 30 looms, from the Fretz Building, to Trenton Avenue and Sargeant Sts.

Mills Starting Up.

Pennsylvania, Kutztown. The Kutztown and Fleetwood branches of the York Silk Mill Mfg. Co., after being shut down for two months, have resumed operations, giving employment to 300 hands.

Mills Shutting Down.

New Jersey, Paterson. Bentley Bros. have closed their plant in the New Barnett Mill. 104 looms were operated on tie silks.

New York, Delhi. The Delhi Silk Co. has shut down owing, it is said, to a disagreement among the owners.

MISCELLANEOUS.

Canada, Ontario, Toronto. The Narrow Fabric Co., Richard Schofield, proprietor, advises that repairs made necessary by the recent fire, have been completed and new looms added. The plant is running as usual.

*Indiana, Converse. J. S. Sellers is starting a fabric glove and mitten factory to be known as the Converse Glove & Mitten Works. He would like to get in touch with the manufacturer of goods for knit wrist bands or a manufacturer of machinery for this class of work. Manufacturing will commence Feb. 15.

*Massachusetts, Lowell. John C. Meyer & Co. spool cotton and silk manufacturers, have shipped one carload of their equipment to the Pickering Mfg. Co., which as previously reported, they have bought. Removal will be accomplished as gradually as possible, while continuing operations in the plant at Jamaica Plain. The whole equipment of the Pickering Mfg. Co. is on sale at the plant. The Meyer Company will not have completed the enlargement contemplated and be running in full at the Lowell plant until the middle of the Summer.

*Massachusetts, Millbury. Plans have been completed for the additions to the plant of the West End Thread Company which we reported last July would be built. Chas. T. Main (Boston) has prepared plans as follows: a building, 2 stories high, 60 by 125 ft.; second building to be used for reeling and drying to be 3 stories high, 50 by 65 ft., a dye and bleach house, 1 story high, 82 by 32 ft., and an addition 2 stories high, 31 by 54 ft., will be built to the store house. Mill construction will be used throughout and the total expenditure will be about $40,000. Building contracts have not been given out.

Massachusetts, South Acton. The Moore & Burgess Webbing Co. will be incorporated within a few days with capital stock of $10,000, all paid in. They will manufacture non-elastic webbing in cotton, silk and mercerized. The product will be sold direct. Messrs. Moore and Burgess will do the buying for the concern. All the looms needed have been ordered and it is hoped that manufacturing will begin in the vicinity of April 1. This report refers to a new company which some newspapers report as the South Acton Webbing Co., and the place as Marlboro, Mass.

New Hampshire, Manchester. Jos. R. Fredd and Thomas Wood, formerly assistant paymaster and overseer of carding, respectively, at the Stark Mills, have leased the old Hutchinson Foundry building on South Elm St. and will equip it for the manufacture of felt mattresses. Operations will commence as soon as possible.

New Jersey, Camden. The Shamo Novelty Co. has recently been incorporated with a capital of $10,000 for the manufacture of woolen fabrics. The incorporators are Frank R. Hansell, George H. B. Martin and John A. McPeak.

*New Jersey, Camden. The Franklin Narrow

Fabric Co., recently incorporated with a capital of $50,000, has taken over the business of Stokes & Taylor, located at 3d and Federal Sts. The officers of the company are Hugh Taylor, president; James Franklin, treasurer, and Harry Z. Taylor, general manager and buyer. The plant is equipped with 8 looms and 6 braiders which are run on tapes, bindings, braids and shoe laces, of silk, cotton, and mercerized yarns. They report being very busy and have in contemplation the matter of largely increasing the plant in the near future. They sell direct.

*North Carolina, Tryon. The Pacolet Finishing Company, which we have previously reported as incorporated with capital stock of $125,000, will finish both woven and knitted goods. J. F. Wilcox, president of the Skyland Hosiery Company, which is erecting a mill at Flat Rock, N. C., is at the head of the Pacolet Company.

Ohio, Piqua. The Piqua Bleaching & Dyeing Co. has been incorporated with capital stock of $20,000. Building has been completed and about March 15 will be equipped to do a regular bleaching and dyeing business for knitting mills. David M. Rankin is president and treasurer. Steam power is used.

FAILURES AND SUSPENSIONS.

Connecticut, Vernon. On the application of F. F. Small and Clement H. Brigham owners of 22 shares of the capital stock of the Ravine Mills Co., the Superior Court appointed James Lee Loomis receiver under bond of $20,000. The Ravine Mills Co. have capital stock of $18,000 and manufacture warps and twines on 3,000 ring spindles. R. B. Parker is pres. and treas.; and John D. Parker is supt. It is understood that the First National Bank of Hartford holds a mortgage of $13,500 on the plant and have instituted foreclosure proceedings.

Kentucky, Louisville. R. G. Robbins of Mayfield, Ky. has been appointed receiver for the Mayfield Woolen Mills Clothing Co. of this city and temporary injunction granted restraining creditors from bringing suit to recover claims. The company filed the suit for receiver asserting that it was unable to obtain necessary cash to transact business. The company declares its capital stock is $952,800, liabilities $307,067, and assets $563,900.

New Jersey, Paterson. The Laurel Silk Works has made an assignment to Anton Schmidt of New York. According to the company's statement, its liabilities are $70,000; assets, $39,000. The company owns merchandise valued at $100,000 and machinery worth $35,000. $2,000 in cash is on hand. The merchandise, however, which is in the hands of Frederick Vietor & Achelis Co., has advances against it to the amount of $98,000, which is responsible for the shrinkage in the assets. The Laurel Silk Works operated 178 looms on dress silks. Aurel Meckel is president and treasurer.

Pennsylvania, Sellersville. The Armure Tapestry Mill, Inc., is in bankruptcy, and Henry T. Williams has been appointed receiver. An inventory and appraisement of the assets are now being made. The receiver is reported as stating he hopes it may be possible to continue the operation of the plant.

FIRES.

Connecticut, Putnam. Fire destroyed a building of the Pine Tree Worsted Co., causing a loss of $40,000. The fire started in the card room and made rapid progress, consuming the whole department before it was checked. The Pine Tree Worsted Co. operated 25 looms on cotton worsteds. Geo. A. Torrance is president and Robert E. Torrance, treasurer.

Massachusetts, Lowell. No. 3 Mill of the Appleton Mills was damaged by fire with a loss on the building, stock and machinery, amounting to $20,000. The largest damage was on stock drenched by water. Loss is covered by insurance. No. 3 Mill is the carding and spinning mill.

New Hampshire, Belmont. Considerable damage was done to the stock of the Gilmanton Mills by fire. Loss is estimated at $1,500.

New York, New York. A fire in the 6-story building at 422 W. 14th St. destroyed the 5th and 6th floors. The West Side Knitting Mills plant was located on the 5th floor. This company had capital stock of $25,000 and operated 50 latch needle and 75 sewing machines on ladies' and children's cotton ribbed underwear. W. F. Ritter is treas. and buyer.

Ohio, Piqua. Fire in the factory of the Stuart-Brown Underwear Co. caused a loss of 50 per cent. of the plant and stock. 25 latch needle knitting machines and 25 sewing machines are operated on men's and boys' union suits of cotton, worsted, lisle and mercerized.

Pennsylvania, Philadelphia. Fire recently damaged the three-story brick mill at Hancock and Somerset Sts. to the extent of $10,000. The building is occupied by the Rhodesia Mfg. Co., manufacturers of woolen and worsted dress goods and shawls on 29 looms; and Fred. Pearson & Co., Inc., manufacturers of plushes, etc., on 43 looms. The damage, which was covered by insurance, will be repaired at once.

Pennsylvania, Philadelphia. A fire in the two-story frame building on Edgemont St., below Orthodox, Bridesburg, used by the Killian Manufacturing Co. for the manufacture of ribbons on 16 looms, destroyed goods valued at $20 and damaged the building and machinery to the extent of $5,000. The origin of the fire is unknown.

Pennsylvania, Philadelphia. A nail in a picker in the mill of Robert Beatty & Co., manufacturers of fine cotton yarns on 16,814 spindles, recently caused a fire which resulted in a damage of $2,000. The burned portion of the plant will be repaired at once.

Pennsylvania, Philadelphia. The 2 1/2-story frame dye house of Joseph R. Masland, located at Torresdale Ave. and Margaretta St., Frankford, was damaged by fire to the extent of $2,000. The loss was covered by insurance. Damages will be repaired as soon as possible.

Pennsylvania, Philadelphia. A destructive fire has destroyed the Tioga Mills, operated by Thomas Henry & Sons at Trenton Ave. and Tioga Sts. They manufactured cotton yarns on 30,000 spindles. The mill was one of the largest in this vicinity. The loss is estimated at $200,000.

FACTS AND GOSSIP.

Alabama, Huntsville. The Rowe Knitting Co. has filed a declaration changing the name of the firm to the Huntsville Knitting Co. Lawrence Cooper is pres., and W. I. Wellman sec. and treas. The company has capital stock of $300,000 and operates 5120 cotton spindles, 30 knitting and 50 sewing machines on men's cotton fleece-lined underwear.

*Alabama, Siluria. The Siluria Cotton Mill Co. which we reported as applying for a charter in the local court will not make any changes at present.

*California, Los Angeles. The Chamber of Commerce and A. H. Beach are assisting Dennis Howarth in the organization of the proposed cotton mill company. It is stated that a site upon the Los Angeles River has been selected and that three buildings will be erected shortly. The proposed company plans also to grow cotton in Southern California, but it is stated that the first cotton to be used in the mills will come from Texas. Undoubtedly plans are developing toward the erection of a large cotton mill, but the developments up to this time would not indicate that the plant will be built and started for some time.

Connecticut, Bristol. N. L. Birge & Sons Co. is operating some departments overtime and buying quantities of yarn in order to fill orders on time. Men's flat cotton underwear is manufactured. W. F. Stone, Jr., is treasurer, superintendent and buyer.

Connecticut, Broad Brook. The Broad Brook Company is working four nights a week owing to unusual briskness in their lines. Fine woolens and worsteds are manufactured on 15 sets and 100 looms.

*Connecticut, Middleton. The appraisers of the York Silk Mfg. Co. have filed an inventory of local property. The total appraisal amounts to $175,354. The local plant was formerly the Merchants' Silk Co.

*Connecticut, Putnam. The Boards of Trade of several places have invited the Pine Tree Worsted Co., whose plant was recently destroyed by fire, to locate in their respective cities. It is probable, however, that the company will decide to remain in Putnam. The loss sustained by the company by the fire is $65,000.

*Connecticut, South Coventry. Wm. C. Latimer, trustee of the Washburn Silk Co., bankrupt estate, has been granted an order of sale by referee Andrew J. Bowen.

Delaware, Wilmington. It is reported that another silk mill will be established here shortly. It is understood that capital has been subscribed and an option secured on a suitable site. Names of interested parties have not been learned.

District of Columbia, Washington. Achilles Bacon & Co., Salonika, Turkey, are interested in receiving prices, specifications and full particulars regarding equipment for a woolen mill. The Department of Commerce & Labor, Bureau of Manufactures, may be addressed.

*Georgia, Augusta. The names of parties interested in the establishment of a rope factory in this city, cannot be learned. Plans are in a preliminary state and it is not certain by any means that the industry will locate here.

Georgia, Augusta. The Chamber of Commerce is arranging with a manufacturer for the establishment of a cotton rope factory in that city.

Georgia, Atlanta. The Atlanta Woolen Mills has put on a night force and expects to run night and day indefinitely. This is one of the mills of the recently formed American Textile Woolen Co. 6 sets of cards, 250 narrow and 32 broad looms are operated on fancy cassimeres. Vaughn Nixon is treasurer and buyer.

Georgia, Newnan. The Newnan Cotton Mills is renewing its charter of incorporation and providing for the privilege of increasing the capital stock to $2,500,000. The company was originally incorporated in 1888 with capital stock of $500,000. 59,000 ring spindles are operated on cotton yarns.

Illinois, Chicago. The Florence Embroidery & Knitting Co. has leased the 5th floor in the Ottawa Bldg., 105-9 E. Madison St., for 5 years. It is understood that the machinery equipment will be increased.

Maine, Bangor. The change of control from Mr. Shorro to Mr. Wallace will not affect the running of the Berlin Knitting Co. 18 knitting machines and 16 sewing machines are operated by electricity on men's, boys' and ladies' sweaters. Worsted and merino yarns are bought.

Maine, Biddeford. The Pepperell Mfg. Co. has returned to a full time schedule after completing the 25 per cent. curtailment decided upon by the Arkwright Club.

Maine, Portland. The Herkimer Fibre Co. has been incorporated with capital stock of $100,000. John H. Pierce, John H. Ridge, Roscoe T. Holt, David Snow and others are the incorporators.

Maine, Saco. The York Mfg. Co. went back on full time Monday morning. The plant went on reduced schedule when the other mills in New England started to do so.

Maine, Sangerville. The Sangerville Woolen Co. has been incorporated with capital stock of $50,000. Frank S. Carr, Fred H. Carr and Harold M. Carr are the incorporators. Frank S. Carr is pres., and Fred H. Carr, is treas. The plant is now in operation manufacturing men's and women's woolens on 4 sets and 32 looms.

Maine, Yarmouth. The plant of the Royal River Mfg. Co., owned and operated by L. L. Shaw & Co., is to be sold by the Administrator of the late L. L. Shaw, with the water privilege on Royal River belonging to the company. The mill is a 3-story brick structure containing 44 looms.

2,400 ring spinning and 576 twisting spindles. The plant is now in operation and manufacturing seamless grain bags, warp yarns and twines.

Massachusetts, Franklin. The Bart Linn Woolen Co. is running until 9 o'clock four nights a week and until 5 o'clock on Saturday, a total of 74 hours per week, manufacturing wool and worsted piece dyes.

Massachusetts, Lowell. The strike of weavers at the Merrimack Woolen Co. has been declared off. The difficulties started 11 weeks ago as a result of the introduction of the 2-loom system.

Massachusetts, Lowell. The Massachusetts Cotton Mills and the Hamilton Mfg. Co. have returned to a 58-hour schedule.

Massachusetts, Lowell. Short time at the Merrimack Mfg. Co. ended yesterday, the mills resuming the 58 hour schedule today. This anticipates by two days the general resumption of work in the cotton mills of Lowell.

Massachusetts, Lowell. The economizer in the boiler room of the new power house of the Hamilton Mfg. Co. exploded, injuring a number of men and doing considerable damage to property. The new power house has been under construction for the past year and was being tested for efficiency by the construction company.

*Massachusetts, Medford. The Crown Dyeing Co., which we previously reported in bankruptcy, has filed a schedule of liabilities amounting to $161,500 and assets estimated at $171,200. At present the property of the company is in the hands of Guy W. Cox, Boston, and A. S. Davis, Melrose, trustees for the creditors. Unsecured claims amount to $94,650 and secured claims to $58,000.

*Massachusetts, North Adams. The receivers of the Arnold Print Works have been authorized to borrow another $100,000 on receivers' certificates, making $400,000 authorized altogether. The court also authorized the receivers to borrow from the National Bank of Commerce of New York an amount equivalent to 60 per cent. of the money deposited there by the receivers, but not exceeding in all $600,000. It is reported that large sums of money will be due the Arnold Print Works shortly for goods delivered.

*Massachusetts, North Brookfield. Apparently the Oxford Linen Co. will have a home for its patent process for linen manufacturing, in this city. It is reported that they have bought the building lately occupied by the Indian Orchard Flax Co. and are putting it in condition before installing machinery.

Massachusetts, North Chelmsford. The Moore Spinning Co. is running night and day forces in the scouring, carding and combing departments. 25,000 worsted spindles, 40 combs, and 38 worsted cards are operated. L. H. Fitch, Boston, is selling agent.

Massachusetts, North Dighton. The Mt. Hope Finishing Co. may return to a night and day schedule owing to the amount of work on hand. The Mt. Hope Co. bleaches, mercerizes and finishes cotton piece goods. Joseph F. Knowles is president and Jos. K. Milliken, treasurer.

Massachusetts, Worcester. The Mills Woven Cartridge Belt Co. is operating 60 looms on woven cartridge belts and heavy cotton narrow fabrics. The company has capital stock of $500,000. Wm. Lindsey is president, Frank R. Batchelder, treasurer, general manager and buyer and Clarence E. Smith, superintendent. The plant is operated by steam power and product is sold direct.

Michigan, Ypsilanti. The Union Trust Co. of Detroit, which is the receiver for the Ypsilanti Underwear Co., is to sell the plant by auction on April 2.

*Minnesota, Spring Valley. John Luethold, president of the Spring Valley Flax Fibre Co. whose plant was recently destroyed by fire, advises that it has not been decided as yet whether to rebuild or not.

New Hampshire, Meredith. The Atlas Linen Co. which was recently re-organized, is running overtime three nights a week and giving employment to a large number of additional employees.

New Hampshire, Nashua. The plant of the Jackson Company resumed operations yesterday on full time and is back to the schedule of 58 hours per week.

*New Hampshire, Penacook. It is reported that a force of men are at work in the Concord Mfg. Co. getting out samples and putting the machinery and general equipment in shape for regular work. The plant shut down early in May owing, it is said, to a desire to start on a different line of goods. The Concord Mfg. Co. has a capital stock of $150,000, and the equipment consists of 14 sets and 125 looms, which were operated on men's wear, woolens, thibets, kerseys and similar goods. Paul R. Holden is president.

New Jersey, Burlington. The Burlington Silk Mills have been incorporated with capital stock of $10,000. M. L. Cohn, E. E. Renner and E. E. Wolfe are the incorporators.

New Jersey, Jersey City. The Chas. E. Adams Co. has been incorporated with capital stock of $50,000. John R. Emery, Walter H. Griffin and Charles E. Adams are the incorporators. It is understood that a plant will be started for the manufacture of silk fabrics.

New Jersey, Newark. The Guarantee Hosiery Mills have been incorporated with a capital stock of $25,000. It is stated that hosiery and knit goods will be manufactured. E. Garfield Gifford, Harold A. Miller, 765 Broad St., and Harold W. Ley, 250 Parker St., are the incorporators.

New Jersey, Paterson. Isaac Alpern, proprietor of the Eclipse Silk Co., 119 Spruce St., has sold the plant to Morris Blumenfeld. The plant consists of 12 looms operated on broad silks. It is understood that no change will be made by the new proprietor.

New Jersey, Paterson. Albert Baldwin has accepted the position of superintendent at the Augusta Silk Works.

New Jersey, Woodbine. It is rumored that Messrs. Kahn & Son, who recently purchased the mill formerly operated by the Quaker City Knitting Mills, which was removed to Philadelphia, and then shut down and put up for sale, will re-equip the building and start it up again on fancy knit goods.

New York, Albany. The National Fibre Co., incorporated several weeks ago, with capital stock of $5,000, does not intend to start manufacturing for some time, if ever. The company will deal in hair, moss, waste, batts, etc. Richard R. Vandegrift is president and Harrison C. Hall, treasurer.

*New York, Mechanicsville. A new glove factory being started here will manufacture fabric gloves and mittens for men, women and boys. P. J. Schermerhorn is buyer and George C. Smith, superintendent. Cutting machinery and a number of sewing machines will be the only equipment required.

New York, New York. The United States Knitting Co. has been incorporated by I. & N. Beerman and H. Hurst, Jr. The office of the company is at 97 Prince St.

New York, Utica. The United Knit Wear Company has been granted a charter with capital stock of $25,000. Knitted goods will be manufactured. W. William Buderus (New York), Ernest W. Robishon (Mt. Vernon), and Walter D. Johns (Utica), are the incorporators.

New York, Whitesboro. Robert Ablett, proprietor of the Anchor Knitting Mills and part owner of the Alliance Knitting Mills, has retired from active business, relinquishing the management of his interests to Chas. P. Powell, his son-in-law. No change will be made in the running of the plants.

*North Carolina, Charlotte. E. A. Smith has been elected president of the Chadwick-Hoskins Co., W. F. Draper, Hopedale, Mass., vice-pres.; A. J. Draper, treas.; and E. C. Dwelle, sec. and asst. treas. As reported last week, this is a consolidation of a number of Charlotte mills.

*North Carolina, Concord. The committee of stockholders of the Odell Mfg. Co. has sent out a letter calling for a meeting to take place Feb. 25 at Concord. A plan is suggested whereby a satisfactory re-organization may be effected. It is suggested that $200,000 of preferred stock bearing 8 per cent. dividend be issued and subscribed for, which together with the earnings made by the receiver might enable the committee to induce creditors to take 10-year bonds for the larger part of their claims. The mills have been under the management of Caesar Cone for the past year and have made a good profit.

*North Carolina, Mount Airy. J. L. Brown, proprietor of the Laurel Bluff Cotton Mills has postponed the purchase of 2,000 spindles which he contemplated adding to his plant.

*North Carolina, Washington. The Washington Investment Company is interested in the proposed new mill and is desirous of interesting experienced manufacturers. W. E. Jones was previously reported as prominently identified with this project.

Oklahoma, Hooker. The Farmers' Union is reported as forming a company to build a cotton mill.

*Pennsylvania, Allentown. Notice has been given the creditors of Henry Gabriel's Sons that the trustees have petitioned for authority to sell the plant on March 20, on the premises. A meeting will be held at the referee's office on March 6 for a hearing.

Pennsylvania, Conshohocken. Creditors have filed a petition in the U. S. Court to have Thomas J. West, trading as the Gulf Woolen Mills, of Gulf Mills, adjudged an involuntary bankrupt. The petitioning creditors and the amounts of their claims are: Chas. W. Becker, agent, $434.40; Thomas Crompton & Sons, $1,112.12, and J. Wallworth's Sons, $1,145.75. The Gulf Woolen Mills contains 7 sets, 30 narrow and 20 broad looms, which were run on kerseys and cassimeres, the production being sold through New York. The plant is also equipped with a dye house for dyeing raw stock, yarn and piece goods.

Pennsylvania, Philadelphia. Creditors have filed a petition to have William B. Keefer adjudged an involuntary bankrupt. The creditors are: General Chemical Co., $603.86; Alexander Kerr Bros. & Co., $50; Joseph M. Adams Co., $1,336.38. Joseph M. Adams, Henry F. Morris, Jr., and William Fassnacht have been appointed receivers with security fixed at $50,000. The plant was run on ingrain carpets with 107 looms and a dye house.

Pennsylvania, Philadelphia. At a committee's sale on February 28 the entire plant of Edward Clegg's Sons, on Howard St., below Berks, will be sold at public auction. The plant contains six sets cards and other machinery for manufacturing shoddies, and dyeing machinery, also a large amount of raw stock.

*Pennsylvania, Philadelphia. The creditors of the S. S. Fretz Mfg. Co. having recently decided to discontinue the operation of the weaving department after March 1, are asking for sealed bids for its disposal. This department, which is under the management of R. J. Freitag, will be taken over by a new company, it is said, who will continue it under Mr. Freitag's direction, it having been shown that this branch of the business, which has been running steadily ever since the company went into bankruptcy, has proven a profitable investment.

*Pennsylvania, Philadelphia. Alexander Crow, Jr., is proprietor of the Caledonia Mills, in which he manufactured worsted yarns. His approximate liabilities are $550,000 and the assets are about $450,000. This estimate includes the compensation to be paid him by the city as damages for the taking of the mill property for a Parkway.

*Pennsylvania, Philadelphia. By a vote of 80 to 1, it is reported, the creditors of the bankrupt James Dunlap Carpet Co. agreed to accept the compromise offered by James Dunlap, president of the company. Two claims aggregating $272,716 were filed against the company by Dunlap, who offered to settle for 10 per cent. in order to avoid extended litigation. The total liabilities amounted to $413,000. The creditors present represented

$379,975. The one dissenting vote was cast by the Chelsea Jute Co., whose claim amounts to $50,000. The creditors have been paid 45 per cent. of their claims against the company.

*Pennsylvania, Philadelphia. In a recent report it was stated that Henry Huschke was the superintendent at the new mill of the Melbourne Knitting Mills, 2950 Jasper St. We learn that Mr. Huschke is the secretary and not the superintendent. Chas. T. Sullivan, who was superintendent at the old plant, continues in the same capacity at the new mill.

Pennsylvania, Pittsburg. Benjamin H. Thompson, 1167 Frick Bldg. Annex, is the representative of a company formed for the manufacture of engine or wiping waste and advises us that they are in the market for materials used in the manufacture of waste.

*Pennsylvania, Reading. The firm of Grimshaw Bros., owners of the Reading Silk Mill, which we previously reported as disposing of their branch plant at Paterson, N. J., is now a limited company. The officers are as follows: John Grimshaw, president; Geo. Grimshaw, vice-president, and David H. Grimshaw, treasurer.

*Pennsylvania, Rothsville. We have been informed by some parties that mail addressed to the Rothsville Knitting Mills has been returned. Upon investigation we find that this is due to an error on the part of the postmaster. A. J. W. Baker, president of this concern, who is also treasurer of the Rainbow Hosiery Co in Reading, Pa., advises us that the plant is now under construction and will probably be ready to start up the middle or latter part of March.

*Rhode Island, Alton. At a meeting of the creditors of the Alton Mfg. Co. before Mr. Barrows, referee in bankruptcy, Henry R. Segan of Westerly was appointed trustee in bankruptcy. The opinion was generally expressed that the plant will not be idle for a long period.

Rhode Island, Ashaway. The yarn departments of the Ashaway Woolen Co. have been running evenings to supply sufficient yarn to the weave room. Woolen suitings and coverts are made on 8 sets and 31 looms. Product is sold direct.

*Rhode Island, Bellefont. It is reported that negotiations have been completed for a reorganization of the Brindle Webbing Company. The new concern will be known as the Bellefont Webbing Company and will take over all the interests of the Brindle Webbing Company, which has existed as a co-partnership. Articles of incorporation will be filed at once. It is understood that David Lyman will transfer his interest in the concern to other parties.

Rhode Island, Pawtucket. It is reported that the American Textile Co. has filed a petition asking for an increase in capital stock from $500,000 to $1,000,000.

*Rhode Island, Providence. The creditors' committee of the Whittle Dye Works report that an offer has been made by J. M. St. John of New York to lease the plant for one year at a rental of $12,500. The committee was instructed to do everything possible to complete the details of the lease.

Rhode Island, Providence. W. A. Guile, Sr., president and treasurer of the Earnescliffe Mills, is of the opinion that the Earnescliffe fabrics can be withdrawn from the market as the products will be all sold up. The branch plant at Greenville has started a night force in addition to the regular day force. The main plant in this city is running night and day.

*Rhode Island, Thornton. After postponing the sale several times owing to possibilities of effecting a settlement, the plant of the Fitch Mfg. Company has been sold to F. W. Tillinghast of the Tillinghast-Stiles Co., Providence, for $5,000. The Tillinghast-Stiles Co. holds a mortgage of $15,000 on the property. The mill is equipped for the manufacture of eiderdowns. We reported in January that Mr. Tillinghast would secure control of the property.

Rhode Island, Shannock. It is reported that the Rhode Island Cordage Co. is disposing of its machinery and will go out of business. Sash cord and other lines of braided cord are manufactured on 72 braiders. Frank E. Tingley is president and A. N. Bullock, treas. The company has capital stock of $50,000.

*Rhode Island, Westerly. John W. Conant advises that he is getting out plans for a new silk mill but will not decide about building for some weeks.

*Rhode Island, Woonsocket. The report that Louis A. Anderson, formerly agent of the River Spinning Co., would start a worsted spinning plant, is incorrect. Mr. Anderson advises that he has no intention of starting a yarn plant and never has considered the matter. He is taking a needed rest before engaging with some other firm.

*South Carolina, Spartanburg. The proposed mill in which we reported Elisha Bomar as interested, last August, has taken no definite action and there are no prospects of an early formation of a company. The proposed plant was to have 10,000 spindles for the manufacture of cotton yarn.

*South Dakota, Rapid City. George B. Mansfield states that three New England concerns have corresponded with him inquiring into the inducements offered for woolen manufacturing plants to locate here. No names have been given out.

Tennessee, Lebanon. S. R. Hawks is at the head of a project for establishing a plant for knitting woolen knitted fabrics.

Tennessee, Memphis. W. H. Chadwick, formerly of the Algonquin Printing Co. at Fall River, is interested with W. H. Carter of the American Bag Co. in organizing a new calico printing plant. It is reported that plans have been nearly completed.

Tennessee, Ozone. L. H. Stone is reported at the head of a project to establish a knitting mill. No further details have been learned and the proposed company is probably in a very preliminary stage.

*Utah, Salt Lake City. The Cache Knitting Works of Logan, Utah, who purchased the plant and business of the Ensign Knitting Co. at a cost

of practically $45,000, advise as follows: The capital stock of the Cache Knitting Works has been increased to $75,000, which amount is nearly all subscribed and paid for. The Cache Knitting Works of Logan and the Ensign Knitting Co. of Salt Lake City will be run under one management with headquarters at Logan. The Logan mill will be known as the Cache Knitting Works and the Salt Lake City mill as the Ensign Knitting Works. The officers of the corporation are as follows: T. W. Lloyd, Logan, president; C. E. Lloyd, Salt Lake City, vice-president; Oscar Borkman, Logan, secretary and treasurer. E. N. Stone is superintendent of the Logan plant and J. Jones will be superintendent of the Salt Lake City plant.

*Vermont, Saxton's River. At the sale of the Saxton's River Woolen Mill, previously reported. Henry Frankle of Philadelphia was the successful bidder.

*Virginia, Norfolk. The receiver for the Berkley Knitting Mills is operating the plant by order of the Court and advises us that it will be operated until a purchaser is found who will take the plant as a going concern. The Berkley Knitting Mills have capital stock of $50,000 and give employment to 80 hands. 20 knitting machines and 25 sewing machines are operated on women's and children's ribbed underwear. The plant is in excellent condition, with good labor and shipping facilities.

*Virginia, Norfolk. The Berkley Knitting Mills, which we have previously reported in bankruptcy, are for sale by the receivers, Samuel M. Simpson, Joseph A. Wallace and M. Langford. The plant has daily capacity of 600 dozen women's ribbed knit underwear and is now in operation by the receivers. It is said there is plenty of business on hand.

West Virginia, Parkersburg. The United Woolen Mills Co., clothing manufacturers, are reported considering the advisability of starting a small woolen plant.

Personals.

Geo. Otis Draper has tendered his resignation from the board of directors and from the office of secretary of the Draper Company. His resignation, which has not yet been acted upon by the board, will be a genuine surprise throughout the trade, as he has been so closely identified with the great business of the Draper Company for over twenty years, having gone into the business in 1887 and been secretary of the Company since 1897, when the various corporations owned by the Draper family in Hopedale were consolidated.

He had special charge of the patents and Legal Department of the business and the introduction and exploitation of its machinery.

Mr. Draper is a man of active mind and takes a great interest in a wide variety of subjects, and besides his contributions to textile literature and his many addresses before the various cotton manufacturers' associations and his well known "Cotton Chats," he has published books on a number of subjects, his most recent being a study of the present financial situation, entitled "More," which is just from the press. At the present time he is taking a much needed vacation in the South and his future plans have not been announced.

Geo. R. Giffin has accepted the position as overseer of weaving for the Bound Brook Woolen Mills, Bound Brook, N. J. Mr. Giffin was formerly employed at the Merchant's Mill, East Dedham, Mass. He succeeds his father, who goes to the Merrimack Mills, Dracut, Mass.

Walter Pickford, secretary of the National Association of Woolen and Worsted Overseers, desired that all members who have not yet received their membership cards and cases to send a two-cent stamp for postage and same will be forwarded to them.

Peter Costello, Jr., has accepted a position as overseer of finishing for the Merrimack Woolen Mills, Dracut, Mass. He was formerly employed at the Beaver Brook Mills, Collinsville, Mass.

William Roberts has accepted a position as overseer of finishing and dyeing for the Sykes Woolen Mills, Reynoldsville, Pa. He comes from Marshalltown, Del.

P. C. Bryan has been appointed overseer of weaving at the Anchor Duck Mills, Rome, Ga.

L. W. Evans has resigned the position as overseer of carding at the Hamer Cotton Mills and accepted a similar one with the Maple Cotton Mills, Dillon, S. C.

Benjamin Sprowson has accepted the position as overseer of carding for the Grant Yarn Company, Fitchburg, Mass. He was formerly employed at the Blackstone Mfg. Company, Blackstone, Mass., as second hand.

James Daley has accepted a position as overseer of spinning for J. Broadbent & Son's Factory at Unionville, Conn. He was formerly employed at the Bristol Mfg. Company, Plainville, Conn.

Phillip Tripp has been chosen treasurer of the Ancona Company, Fall River, Mass., to succeed the late Frank H. Dwelly.

Fred Hanson has accepted a position as superintendent of the Greenville Woolen Mills, Greenville, R. I. He formerly held the position as designer for the Putnam Woolen Company, Putnam, Conn.

Edward Barker was elected treasurer of the Flint Mills at a meeting of the stockholders. He takes the position made vacant by the recent death of Wm. S. Potter.

E. E. Leith has accepted the position as overseer of weaving for the Thomas Kent Mfg. Company, Clifton Heights, Pa. He was formerly employed at the Franklin Woolen Mills Company, Franklin, Ky.

Raymond D. Carter, formerly managing editor of the "Newark Morning Star," has been ap-

pointed general advertising agent of the Central Railroad of New Jersey and editor of its monthly magazine, "The Suburbanite," with offices at 143 Liberty St., New York.

Jos. H. Ridings has severed his connection with the Jersey Cloth Company, Methuen, Mass., and accepted a position as overseer of finishing for the Tremont Worsted Company, Methuen.

Chas. L. Staples, superintendent of the Haile & Frost Mfg. Company, Hinsdale, Mass., has been transferred to the position as superintendent of the Wilton Woolen Company, Wilton, N. H., succeeding A. B. Widdoes, who resigned. Mr. Staples is an exceptionally good man and will fit the position which he has accepted.

Simeon B. Chace, treasurer of the King Phillip and Osborn Mills, Fall River, Mass., was appointed treasurer of the Tecumseh Mills at a meeting of the directors held January 31. Mr. Chace succeeds the late Frank H. Dwelly, deceased. He will probably resign the treasurership of the Osborn Mills and the vacancy will be filled by the directors. He formerly held the position as treasurer of this mill some years ago.

John Brown has accepted the position as overseer of the carding department for the J. L. & T. D. Peck Mfg. Company, Pittsfield, Mass. He was formerly employed at Newburyport, Mass.

Geo. S. Griffin, overseer of weaving at the Bound Brook Woolen Mills, Bound Brook, N. J., has severed his connection with that company to accept a similar position with the Merrimack Woolen Mills, Dracut, Mass. He will also have in connection with the weaving, the position as assistant superintendent and designer. Mr. Griffin is an exceptionally good man and will no doubt fill the position acceptably.

B. M. Miller has resigned his position as overseer of dyeing at the Marlborough Cotton Mills, No. 3, McColl, S. C., and will enter into the cotton raising business for the coming year. He is succeeded by W. B. Wood from Concord, N. C.

John E. Buck has been promoted to the position of overseer of weaving in the No. 2 weave room of the Rosemary Cotton Mills, Rosemary, N. C., succeeding W. B. Wicker, who has accepted a position as overseer of weaving at Danville, Va.

Christopher P. Brooks, who recently sold out his interest in the International Correspondence Schools, New Bedford, Mass., was pleasantly surprised on Friday evening, January 31, by the present and former employes of the correspondence schools of textiles, who presented him with a handsome silver loving cup on which was inscribed: Presented to Christopher P. Brooks by the Textile Department, I. C. S., 1908. This was given to Mr. Brooks on the occasion of his resignation as a token of the pleasant relations which had existed between him and the members. Mr. Brooks in a few words suitably acknowledged the gift. He will leave in a few weeks for an extended tour in Europe with his family.

Harold E. Beale has accepted a position as designer for the Wilton Woolen Company, Wilton, N. H.

Arthur D. Little, chemical engineer of Boston, has just been re-elected official chemist of the American Paper and Pulp Association, at the recent meeting of which he read a most enlightening paper upon recent development in the manufacture of paper and pulp.

John A. Thomas has accepted the position as overseer of weaving at the French River Textile Company, Mechanicsville, Conn. He was formerly employed at Sayles & Jenks, Warren Woolen Mills, Warren, Mass.

Albert Baechtold, superintendent of the Chinnabee Cotton Mills, Talladega, Ala., has severed his connection with that company and bought an interest in the Selocta Hosiery Mills, same city. He has been elected general manager and buyer for this mill.

Wm. M. Knight has accepted a position at the Taunton River Silk Mills, as overseer of winding, warping and weaving. He was formerly employed at the Barnaby Mfg. Company, Fall River, Mass.

Frank Plunkett, overseer of carding at Chas. W. Davis & Company, Northfield, Vt., has severed his connection with that company and returned to his home in Lowell, Mass.

Frank Judson has accepted the position as overseer of finishing for the Middlesex Mills, Lowell, Mass., succeeding Thos. J. Connelly. Mr. Judson comes from the Merrimack Mills, Dracut, Mass.

Chas. Jackson has accepted the position as overseer of spinning for the Middlesex Mills, Lowell, Mass. He comes from the Faulkner Mfg. Company, North Billerica, Mass.

Noble Howard has accepted a responsible position with the Boston Wool Scouring Company, East Boston, Mass. He was formerly employed at the Wood Worsted Mills, Lawrence, Mass.

Addison E. Bullard has been elected treasurer of the Chas. River Woolen Company, Franklin, Mass., succeeding Harry Hayward.

Walter F. Summersby, agent of the Atlantic Mills, Lawrence, Mass., and James P. Barnes, head designer for the American Woolen Company, have been selected by Mayor Kane to serve as members of a commission of five to have charge of the newly instituted industrial school.

Wm. P. Holt, who succeeded Geo. A. Moody as superintendent of the Thorndike Mill, West Warren, Mass., and who has held the position as agent since the death of Chas. H. Hobbs, will still continue as superintendent of the mill and Wm. Tallant will act as assistant superintendent.

Tom Jubb has accepted a position as superintendent of the Kalamazoo Blanket Company, Kalamazoo, Mich. He was formerly employed by E. N. Henry Company, Montreal, Canada.

Wm. H. Jennings, treasurer of the Algonquin Printing Company, Fall River, Mass., has been appointed treasurer of the Osborn Mills, to succeed Simon B. Chase.

Leeman H. Gibbs has been elected president and treasurer of the Cable Flax Mills, Schaghticoke, N. Y. and F. H. Moses, secretary.

F. W. Bell has accepted a position as overseer of spinning at the Faulkner Mfg. Company, North Billerica, Mass. He was formerly employed at the Sterling Mills, Lowell, Mass., as second hand.

J. L. Eadie, designer at the Globe Woolen Mills, Utica, N. Y., has severed his connection with that company and accepted a position with the Middlesex and U. S. Bunting Mills, Lowell, Mass., in a similar capacity.

James Andrews, superintendent of the bleaching department at the Middlesex Linen Company, Milford, N. H., has severed his connection with that company.

Edmond Nuttall, employed as loom fixer at the No. 7 Iron Works Mill, Fall River, Mass., was presented with a Morris chair by the weavers employed on his section.

Peter Costello, Sr., has severed his connection as overseer of finishing for the Minterburn Mills Company, Rockville, Conn.

Edward Ridder has accepted the position as superintendent of the Upland Silk Company, Paterson, N. J., Miss Carrie E. Orr having resigned to establish the Madison Ribbon Company.

Edgar Eaton, overseer of carding at the Bigelow Carpet Mills, Clinton, Mass., has severed his connection with that company.

Robert Clark was elected president, Frederick Haight, vice-president, and Geo. W. Clark, secretary of the Superior Mfg. Company, Hoosick Falls, N. Y., at a meeting held by the directors.

J. E. Whiteside has accepted the position as superintendent for the Bamberg Cotton Mill Company, Bamberg, S. C., succeeding J. W. Black.

Thomas Wood, overseer of carding at the Stark Mills, Manchester, N. H., and Jos. R. Fradd, assistant paymaster, have severed their connection with that company and will engage in the manufacture of felt mattresses.

Robert Schoulder of Blackington, Mass., has accepted a position as designer for the Franklin Mills, American Woolen Company, Franklin, Mass.

Morris A. Hushin has accepted the position as overseer of dyeing at the Virginia Woolen Company, Winchester, Va.

James Savage has accepted a position as overseer of carding at North Adams, Mass.

Harry Gill, overseer of dyeing at the Riverside Woolen Mills, Stafford, Conn., has severed his connection with that company and accepted a similar position with the Carolina Mills, Carolina, R. I.

Thos. J. Connelly, overseer of finishing for the Middlesex Mills, Lowell, Mass., has severed his connection with that company.

John W. Gledhill has accepted a position in charge of gigging for the Bound Brook Woolen Mills, Bound Brook, N. J. He was formerly employed as overseer of finishing at the Chase Mfg. Company, Waterville, Me.

Walter B. Hall, superintendent of the Hamilton Mfg. Company, Lowell, Mass., has severed his connection with that company and has been appointed agent of the Thorndike Company, West Warren, Mass. Mr. Hall has held the position as superintendent for the Hamilton Mfg. Company for the past two years. A banquet was tendered him at the Country Club House, Tyngs Island, February 14th.

T. P. Donahue, overseer of finishing for the Montrose Mills, Woonsocket, R. I., has severed his connection with that company.

G. Provost has accepted a position as overseer of dyeing for the Lafayette Worsted Company, Woonsocket, R. I.

Vernon C. Faunce, formerly overseer of carding at the Rotch Mill, New Bedford, Mass., is to succeed Walter B. Hall as superintendent of the Hamilton Mfg. Co. Company, Lowell, Mass.

Harry Closson, pin setter for the Pitkin Holdsworth Worsted Company, Passaic, N. J., has severed his connection with that company and accepted a similar position with the Fleisher Mills, Philadelphia, Pa.

S. S. Greene, overseer of spinning at the Stafford Worsted Mills, Stafford Springs, Conn., has severed his connection with that company and the position has been filled by Albert Bracup.

Matthew Allen has accepted the position as overseer of spinning for the Hugh Sheridan Woolen Mills, Ashuelot, N. H. He was formerly employed at the Burlington Mills, Winooski, Vt.

Wm. A. Coggeswell, formerly cloth percher at Sidney Blumenthal Company, Shelton, Conn., has severed his connection with that company and returned to his home in Clinton, Mass.

J. R. Ormsby has accepted a position as overseer of weaving at the Steeles' Mill, Cordova, Ala. He comes from Troy, N. C.

I. S. McManus has accepted a position as overseer of spinning for the Mt. Airy Cotton Mills, Mt. Airy, N. C.

Ellis W. Cook, overseer of finishing at the Stott Woolen Company's Mill, Stottsville, N. Y., has severed his connection with that company on account of poor health.

Geo. S. Coster has accepted a position as overseer of dyeing for the Sayles & Jenks Mfg. Company, Warren, Mass. He comes from Philadelphia, Pa.

Ralph Hill has severed his connection as superintendent of the Terry Mfg. Company, Waterville, Me.

James Southern has accepted a position as overseer of finishing at the Belvidere Woolen Mfg. Company, Lowell, Mass. He comes from Hinsdale, Mass.

Frank McNally has severed his connection with the Steven Mill, Franklin Falls, N. Y., as overseer of dressing.

Wm. Barnes, employed at the Conant Thread Factory, Pawtucket, R. I., has accepted a position as second hand in the carding department at the Blackstone Mfg. Company, Blackstone, Mass., succeeding Benjamin Sprowson, who has accepted a position at Fitchburg, Mass.

John Paisley has accepted a position as overseer of spooling and warping at the Bristol Mfg. Company, New Bedford, Mass. He was formerly employed at the Newmarket Mfg. Company, Newmarket, N. H.

W. S. Porter, overseer of weaving at the Fulton Bag & Cotton Mills, Atlanta, Ga., and later at Huntsville, Ala., has again accepted the position as overseer of weaving at the Fulton Bag & Cotton Mills, in their No. 2 Mill.

DEATHS.

Peter B. McManus, proprietor of the Home Bleach & Dye Works of Pawtucket, R. I., and for over 25 years one of the prominent business men of that city, died on the 1st of March after an illness of about two months at the age of 70.

He was born in Glasgow, Scotland, and as a young boy, after a little schooling, went to work for Gettis & Son, a prominent firm of dyers and bleachers in that city. He learned his trade with them and was later employed in Paisley and Belfast, Ireland, at the latter place having full charge of the works. In 1870 he came to this country, first locating at Lewiston, Me., where he spent a few years, and afterwards was for ten years at Walpole, Mass. In 1882 he became manager of the Dyeing and Bleaching Department of the Union Wadding Co., at Pawtucket. Three years later he bought this branch of the business from the Wadding Co. and established the Home Bleach & Dye Works, which has prospered and expanded until today it is one of the leading establishments of its kind in the country.

Mr. McManus was widely known and highly respected in the community and a member of various organizations, including Masonic Lodges, Knights Templar and the Mystic Shrine. He was an honorary member of the G. A. R. and of the Pawtucket Veteran Firemen's Association.

Of eight children, three survive him. His two sons, Peter B. McManus, Jr., and John McManus follow the same line of business as their father, and one was associated with him at the Pawtucket plant, while the other is engaged in similar business in New York State.

Benj. F. Smith, Jr., treasurer of the Wood Worsted Mill, of Lawrence, Mass., died suddenly February 27 of pneumonia at the residence of Wm. M. Wood at North Andover. Mr. Smith was taken ill only three days before and his condition was not regarded as serious until within a few hours of his death. He had been connected with the American Woolen Co. for a number of years, in various important positions. When the Wood Worsted Mill was organized and built he was chosen treasurer.

Henry Brooks, president of Geo. Brooks & Son Co. of the Oriental Mills, West Philadelphia, died suddenly at his home of heart disease. He was widely known in manufacturing circles and a member of many different organizations, director in different Philadelphia business enterprises, and a member of the Manufacturers' Club.

Albert F. Knight, 55 years of age, a prominent mill man, died at his home in Providence, R. I., February 4, following a stroke of paralysis. He was born in East Greenwich, R. I., and at one time superintendent of the mill at that town and Buzichville, R. I., Cornwall, Ont., Ashton, R. I., Manchester, N. H., and Adams, Mass. At the time of his death he was manager of the Providence Machinery Company. He leaves a wife, two daughters and one son.

Hosea D. Manley, superintendent of the mill at Adamsdale, Mass., but who resided at Pawtucket, R. I., died at his home, 21 Eaglewood Ave., Pawtucket, R. I.

Henry L. Greene, one of the best known citizens of the state of Rhode Island, died at his home, River Point, February 12, of apoplexy, in his 83rd year. He attended a meeting on Tuesday of the directors of the Phenix Trust Company, visiting his office at the Clyde Print Works, the S. H. Greene & Sons, Corporation, of which he was the president and was apparently in good spirits. While alone in his library at his home, he passed away without a struggle. He was born May 31, 1825 and is survived by two daughters and one son.

W. B. Tillinghast, a lifelong resident of Rhode Island, died at his home in Johnston, R. I., after a brief illness. He was born in Exeter, June 22, 1835, and was educated in the common schools and at the East Greenwich Academy. At an early age he engaged in the cotton manufacturing business, steadily working his way up until he became an acknowledged expert. In 1867, he became manager of a small cotton mill in Exeter, known as the firm of David Aldrich & Company and five years later was made superintendent of the Arcadia Mills. This position he held for thirty years. He was a most public spirited citizen, interesting himself in all public concerns to improve the education, morals and happiness of the community.

Col. Frank Harris, formerly a prominent manufacturer of Woonsocket, R. I., shot and killed himself, February 10, at the Hotel Lenox, Boston, Mass. At one time he was proprietor and treasurer of the Hamlet Mills Company, which afterwards was taken over by the Hamlet Textile Company, Woonsocket, R. I. He was born April 12, 1855, on a ranch near Centreville, Cal. It is reported the act was due to financial reverses.

Jos. R. Foster, senior member of the firm of Jos. R. Foster & Sons, dyers and finishers, Second and Lippencott Sts., Philadelphia, Pa., died at his home in that city, February 13, of pneumonia at the age of 67 years. Some years ago, with his brother, John F. Foster and Thos. Firth, he formed the company known as the Firth & Foster Company.

John Lewis Ross, one of the oldest cotton manufacturers in the United States, died at his home in Pawtucket, R. I., Saturday, February 8. He

was a native of Coventry, R. I., where he was born April, 1819. At the age of 12, he went to work in a cotton mill at Crompton, where he gave close attention to the work and gained a thorough knowledge of the business which was valuable to him in after life. Having accumulated some money, he invested it in a small cotton factory, which was successful. He later added other mills to his property so that at different times he operated mills in Olneyville, East Killingly, Conn., Oakland and Valley Falls.

Col. Samuel Webber, one of New England's old-time cotton manufacturers, died at his home in Charlestown, N. H., February 23. Colonel Webber grew up in the manufacturing business and was one of the most active and able manufacturers of his generation. He held positions as superintendent of the cotton mills at Chicopee and at Lowell and for a long time was superintendent of the old Manchester Mill and the Manchester Print Works. He was one of the organizers and the first secretary of the Hampden County Cotton Spinners' Association, which was the nucleus and was afterwards merged in the New England Cotton Manufacturers' Association. After giving up active mill work he became consulting engineer and had a large practice in connection with all branches of mill work. He retired from business some years ago. He was over 80 years old at the time of his death. He is survived by three sons, one of whom is W. O. Webber, the mechanical and consulting engineer, also a married daughter.

John L. Ross, one of the oldest cotton manufacturers in the state of Rhode Island, died at his home in Pawtucket, R. I. He rose from a poor boy, working his way upward in the mill, until he came to own and operate several mills of his own and became a large real estate and mill owner. He continued in active management of his extensive business affairs up to the time of his illness.

Jos. Swan, senior member of the firm of Jos. Swan & Sons, silk merchants, 635 Broadway, New York City, died at his home, 33 E. 60th St., after a lingering illness. He had been engaged in the silk business in this city for over fifty years and is survived by his wife, five daughters and a son. He was in his 79th year.

On February 24th Harry Wardman died at Roxbury, Mass., after an illness of about nine months. Mr. Wardman was a native of England and at the age of twelve years came to the United States with his parents, settling at Lawrence, Mass. He was educated in the public schools, and started to earn his living when he was sixteen, going to work in the Washington Mills. At the age of twenty he was placed in charge of the Worcester business of the Weybosset Mills of Providence, R. I., remaining there about seven years, when he returned to England, taking a course in the textile school at Bradford. On his return to America, his health not permitting an inside position, he started as traveling salesman for the Sargent Soap Co., in which position he remained two years. He then accepted the position of superintendent of the American Worsted Mills at Woonsocket, R. I., of which he had charge for about seven years, leaving to associate himself in 1896 with the textile machinery firm of C. E. Riley & Co., Boston, Mass., as woolen and worsted machinery expert and salesman. He remained with this firm until the fall of 1906, leaving to take a position as salesman with the Crompton & Knowles Loom Works of Worcester, Mass.

He had for the past fourteen years made his home in Greenville, R. I. He leaves a wife, the daughter of Richard Waterhouse of Greenville, R. I. His father and mother also survive him. Harry Wardman was a man popular with all who knew him. He was large hearted and genial and once a friend he was always a friend, staunch and true, and ever ready to lend a helping hand to the best of his ability. There are many who will miss him more and more as the time goes on and will long "for the touch of a vanished hand, and the sound of a voice that is still."

Wm. Y. Pomeroy of Hornellsville, N. Y., died at his home in that town, January 30, after a long illness. He was born in Yarmouth. When a young man, he entered the wholesale dry goods business and was connected a number of years with the firm of Storer Bros. He took charge of the Corticelli Silk Company's business.

Henry A. Dunlap, a prominent wool broker connected with the firm of J. A. McMurtry & Company, New York City, committed suicide at a hotel in that city by taking carbolic acid. He was 38 years of age, and is survived by a wife and two daughters.

Henry T. Wing, actively identified with the woolen manufacturing trade, died at his home, 53 Monmouth St. Longwood, February 13th after an illness of about three months. He was born at Uxbridge, Mass., 60 years ago. When a young man, he came to Boston and entered the employ of a prominent wool house. Later was in business for himself, under the firm name of Henry T. Wing & Company. They had a mill at Lawrence for the manufacturing of cloth at one time and also a mill at Webster, Mass.

Chas. M. Weaver, who was stricken with apoplexy in the 60th year of his age, died at his home in Millville, N. J. He had been for a number of years manager of the Menantico Bleach & Dye Works and an official member of the Second Methodist Episcopal Church.

Cyrus A. Taft, agent of the Whitin Machine Works, Whitinsville, Mass., died at his home in that town last week after a short illness. On graduating from Amherst College in 1886, he entered the Whitin Machine Works, following the footsteps of his father, who was connected with the company for many years. He gradually worked his way up until he became agent. He was a public spirited citizen and took great interest in the affairs of the town and was held in high regard in that section of the state.

Wm. F. Boyd, foreman in charge of the setting up of textile machinery for the Whitin Machine Company, Whitinsville, Mass., died at Fall River of gas poisoning, February 12 and was brought to Oakdale, Mass., for burial.

New Publications.

[Any work noticed under this head can be obtained through the office of this journal.]

The Study of Weave Construction (Unterricht in der Bindungslehre). Part 2; by Ivo Kastanek. Professor in the Textile School, Bruenn, Austria; 93 pages, 5 1/2 by 9; published by the author.

The first part of this work, dealing with weave construction for single cloths, was translated by the editor of the Textile World Record in 1903. The systematic classification of weaves, concise and clear explanation, and the numerous illustrations make it one of the best handbooks of weave construction that has been offered to the trade. The same method of treating the subject has been followed in the second part, just published, which deals principally with double cloths under the following divisions: Back Filling, Back Warp, Double Cloths, Stuffing Threads, Ply Fabrics. Additional chapters deal with weaves for special fabrics and effects, such as Turkish towels, velvet and plush, astrachan, figured mulls, corduroy, leno, chenille effects, etc.

By systematic arrangement, conciseness of statement, excellent weave drafts and the use of samples, the author has succeeded in crowding a vast amount of information in this little volume. The text is in German.

Flax, Tow and Jute Spinning; by Peter Sharp; James P. Mathew & Co., Dundee, Scotland; for sale by Peter Sharp, 45 Leonard St., New York; price $1.75.

The appearance of the fourth edition of this work is additional evidence of its merit and popularity. The work has been revised and treats the subject under the following sections: Flax hackling, flax preparing, the roving frame, Combe, Barbour & Combe's roving, Lawson & Son's roving, Fairbairn, Naylor, Macpherson & Co.'s roving, preparing for dry spinning or heavy numbers, tow carding, tow preparing, wet spinning, spinning reaches, dry spinning, spinning twist, fluting, reeling, yarn bundling, yarn drying, jute spinning, batching, carding, preparing, spinning, reeling, bundling, yarn table.

China and America; by Arthur H. Smith: Fleming H. Revell Co., New York; price $1.00.

The writer speaks from an extensive personal observation, having been a missionary in China for thirty-five years. In view of this fact it is surprising that he did not tell us in his book more about China as he saw it, instead of devoting so much space to a discussion of debatable questions regarding both China and America. One who has lived with the Chinese so long must have a vast fund of information that would interest the large number who know them only as laundrymen in America. Instead of facts regarding China the reader of this book finds a great deal of fallacy as to the relations of the white and yellow races. The author apparently fails to appreciate the impassable gulf that separates the two, and the evils that would follow the entry of the Chinese into the United States. How completely he fails to grasp the fundamental objections to Chinese immigration is shown by his reasons for advocating it. The chief of these is the need of labor on the Pacific coast, particularly for salmon-canning, fruit raising and domestic service. Another fault of this book is the propensity to indulge in general and somewhat querulous criticism of the American policy toward China. As a matter of fact this policy has been generous and broad-minded, while recognizing the impossibility of amalgamating the two races and that it is better for both to live apart. In spite of its defects the volume contains much information, told in an interesting way. The historical part of the work is especially good.

Selection of Materials for Concrete.

The importance of careful discrimination in the selection of materials for the making of concrete is forcibly shown by Leonard C. Watson, president of the Aberthaw Construction Co., Boston, in a recent paper. He asserts that "in the selection of sand care should be used to avoid that which is fine and not sharp. The difference in strength due to these qualities alone in some tests of the writer's on sand that was used in foundations amounted to a loss of 52 per cent. from standard sand. Dirt should also be avoided. There has been some controversy as to how much can be permitted but the writer believes that the ordinary test which is performed on the work of throwing a handful into a glass of water is sufficiently reliable for all cases. When the water is badly muddied and remains clouded for a considerable time the sand should be washed or rejected.

"There is little difference obtained in results of broken stone or gravel. By actual test the writer has found that a broken stone having a rough surface with angular fractures will give an increase in strength over a rough bank gravel of about 15 per cent. in most cases. In some, however, the gravel has given the greatest strength. If the stone has a glossy surface such as is found with some trap rocks the gravel will always give the greatest strength. In the first instance if the specifications required 1:3:6 broken stone concrete and there is a difference in cost between broken stone and gravel screenings of 2 cents per cubic foot, it will be cheaper to use a mixture of 1:2 1/2:5 with gravel and still obtain an equal strength with the broken stone. The writer makes the rule never to allow the size of stone in its greatest dimensions to be more than half the thickness of the work into which the concrete is to be placed. In large size work, very much larger stone can be used than is ordinarily done with very good results, the only limitation being that of convenience in handling. In regard to placing, it is much easier to obtain dense concrete, that is, without voids, using gravel than using broken stone, as angular pieces will sometimes arch together, allowing a void to form underneath. For water-tight work gravel is to be preferred every time. For nearly all classes of work the best results will be obtained by using such an amount of water that the concrete when placed will just barely quake, but is not sufficiently soft to flow."

Tuscan Softener.

Harding & Fancourt, 235 N. Front Street, Philadelphia, report an ever increasing sale for their Tuscan Softener, which is being used extensively by dyers of fast black.

For softening fast blacks Tuscan Softener is claimed to be unexcelled, imparting to the finished product an exceptionally bright luster and soft feel. It is also said to be considerably cheaper than the old method of soap and oil, as it is unnecessary to use any additional olive oil. Merino manufacturers will find it especially useful in restoring the woolly feeling to dyed or bleached goods.

Harding & Fancourt also manufacture all grades of Turkey red oil, which they guarantee to be pure and made from the best grade of castor oil. They solicit communications from manufacturers who are looking for a good article of this kind.

Westinghouse Patents Sustained.

An opinion was filed in the United States Circuit Court of Appeals for the District of New Jersey, sustaining an opinion rendered some time ago in favor of the Westinghouse Electric & Mfg. Company against the Prudential Insurance Company of Newark, N. J.

This suit, brought by the Westinghouse Electric & Mfg. Company against the Prudential Insurance Company of Newark, N. J., to restrain it from further infringement of Molan patent No. 582,481, in the use of a direct current generator manufactured by the Bullock Electric Mfg. Company, was decided in favor of the Westinghouse Company in the U. S. Circuit Court, District of New Jersey, and now the Court of Appeals sustains the opinion of the lower court, holding that claims 2 and 4 of the patent are valid and infringed by the use of the Bullock generator in question.

The feature of the direct-current generator to which this patent relates is the means used for clamping the armature laminae in place, and the particular feature is the means for holding the movable clamping ring or flange in position, a split ring partially located in a circumferential groove in the armature spider being used to hold the clamping plate in position, the ring itself being held from centrifugal movement by a shoulder upon the clamping plate. This is an important feature of construction, as it obviates the use of bolts passing through the laminae for the purpose of holding them together.

Ball Bearing Fans.

Some time ago the Massachusetts Fan Co., Watertown, Mass., began the use of ball bearings upon large fans. Friction was materially reduced and the pollution of the air by the oil escaping from bearings avoided. It is now reported that this company is about ready to place upon the market a complete line of smaller steel plate fans equipped with ball-bearings. The advantage lies in the fact that personal attention and the continuous use of oil is avoided, while the power required is materially reduced.

The Handling of Cotton.

After the return home of the English delegation of cotton spinners last spring, efforts were made by the International Federation to secure the cooperation of the Liverpool Association in the efforts to improve the methods of handling and marketing cotton. The following account of the negotiations is taken from the Manchester Guardian:

By invitation Messrs. H. W. Macalister (Manchester) and Mr. Paul von Portheim (Brussels), of the International Committee of Master Cotton Spinners and Manufacturers' Associations, have conferred with the Trade Supervision Committee of the Liverpool Cotton Association upon the best means of remedying certain grievances affecting the cotton trade, and a report has just been issued by the Committee. Mr. Macalister represented that it was very desirable that a uniform standard bale should be adopted throughout the cotton belt. There should be uniformity in size, in density, in covering, and in bands. The Chairman said the Committee was quite in sympathy with the spinners in this matter, but that if the Cotton Association were to legislate in the direction of a standard bale by making no other bale tenderable, the effect would be detrimental both to Liverpool importers and Lancashire spinners, for while it might help to bring standard bales to Liverpool and Manchester, it would be at the expense of limiting the supply, which of course was very undesirable.

On the subject of extra canvas used to contain the cotton, the Chairman said the difficulty of dealing with this question lay in the fact that the c. i. f. contract in general use allowed a certain amount of weight for covering and bands, which naturally was utilized by the American seller to the utmost extent; but if the International Committee of the Master Cotton Spinners' and Manufacturers' Associations would submit a form of contract which would deal in a practical manner with the difficulty, the Committee would do all in their power to get it adopted, but it must be remembered that nothing must be done which would tend to the prejudice of English markets with the American seller. Mr. Macalister said that was their wish, and they would submit a form of contract.

The method of arriving at allowances for internal damp was considered, and Mr. Macalister gave instances of the inadequacy of the allowances made under the present system. He referred to the practice in the Yorkshire woolen trade, where allowances for damp were based on scientific tests carried out by means of ovens, etc. In his opinion the damp in bales of cotton was not entirely due to natural causes. When he was in America he took occasion to examine some of the presses very closely, and on going behind one of them he found a steam pipe for the express purpose of ejecting steam into the bale. He also asked if it was not a fact that buyers in America got allowances for damp, which they did not in their turn allow to the importer. The Chairman said that undoubtedly in some cases this might be so, but the fact remained that for any allowances for damp made to the spinner by the Liverpool merchant almost

without exception came out of his own pocket, with no prospect of recovery from the shipper in America. If the allowance was inadequate, as no doubt at times it was, it simply meant that the merchant and the spinner each bore a share of the loss. He was not favorable to the adoption of what was called a "scientific" test. It was not suitable to such a fibre as cotton. He had been many times to the cotton states, and the practice of steaming the bales had never come under his notice, and he was sure it was not generally in vogue, and it was a most reprehensible thing to do if it was done with the purpose of increasing the weight.

On being asked in what way the Association could help the spinners to attain the objects they had in view, Mr. Macalister said they would be glad to have the weight of the Association behind them when they were urging reforms upon the American cotton trade, and he suggested that a delegate should be appointed by the Association to attend the next Conference in America. He thought it would strengthen the hands of the delegates of the Federation if they could show that all branches of the trade were desirous of seeing improved methods adopted. It was agreed to recommend this suggestion to the favorable consideration of the Board, and also to recommend that letters be written to the American Exchanges and Boards of Trades of the inland towns to ask for their co-operation in redressing their grievances connected with the packing of cotton. The Chairman assured Mr. Macalister and Mr. von Portheim that the Association was most desirous of meeting the wishes of cotton spinners in every way possible consistent with the general good.

Baling Presses.

The Minnich Machine Works, Landisville, Pa., is sending out an aluminum novelty illustrating their baling presses. The Minnich baling presses are for every kind of product requiring baling. They are suitable for rags, waste, cotton, wool, yarn, cloth or any other material in a mill that is baled for convenience in handling or storing. Some of the features which recommend them to users of baling presses are their adaptability to any ordinary room or space that is convenient. There is no cutting of floors, for the press simply sets on the floor. No extra bracing is needed under the press, for there is no pressure on the floor. The ends open out with the sides leaving the bale clear on three sides and easy to take out. Economy in power is secured by applying the pressure downward, avoiding the raising of the weight of the bale, bars, followers, etc., and leaving the bale more convenient to sew and hoop. Attention has been directed on every problem of bale press construction and operation, resulting in a press in which the first cost, the cost of installing, and operating expense, is kept down to the lowest figure, while the results secured are of the highest efficiency. All sizes of presses are manufactured. In ordering, particulars should be given of the materials to be baled and the size and weight of bale to be made. The Minnich machine Works solicits correspondence on presses and press problems.

Resident Engineers.

The Massachusetts Fan Co., of Watertown, Mass., which has heretofore maintained branch offices in Boston, New York, Pittsburg and Cleveland, is now extending its representation through the medium of resident engineers. Cuthbert Schaefer, with offices at First National Bank Bldg., Chicago, and John J. Dwyer at the American National Bank Bldg., St. Paul, will cover the respective territories of which those cities are the natural centres. Both men have already had extended experience in the blower business; they will constitute a material addition to the staff of the Massachusetts Fan Co.

The Fishkill-Corliss Engine.

The Fishkill Landing Machine Co., Fishkill-on-the-Hudson, N. Y., recently issued the seventh edition of their catalogue descriptive of the improved Fishkill-Corliss Horizontal Engines for textile mills, in which its advantages for this purpose are presented in a clear and concise manner.

A New Source of Revenue to the Cotton Planter.

In his annual report to the American Paper & Pulp Association, Arthur D. Little, its official chemist, gives the progress of the year in paper making and dwells particularly on new sources of paper stock.

The use of ground wood in paper making has grown to enormous proportions and is in a great degree responsible for the depletion of the forests. That threatens the water power which is so essential to the textile industries. Textile manufacturers, therefore, have a direct interest in the discovery of some new sources of supply for paper stock. One of these, which has long been known, is the waste cotton fiber which adheres to the seeds. Another is the cotton stalk.

In commenting upon these products, Mr. Little says:

"Within the last year at least three machines have been perfected for separating the short fiber which adheres to our Southern cotton seed after the cotton has been ginned. An average cotton crop may be counted on to yield at least 600,000 tons of this short fiber which now goes into cattle feed to the detriment of the latter. One meets occasionally with paper makers who have tried the fiber but who almost invariably condemn it as unworthy of serious consideration. Within the last few weeks a writer in an English journal stated with much positiveness that this cotton hull fiber was "only suitable for browns and wrappings." The real fact is that this fiber is easily reduced to a pure white stock wholly free from any sign of hull, and a failure to secure as good results from this neglected fiber as from a good grade of cotton rags is a reflection upon the skill of the man who tries to handle it rather than upon the quality of the fiber itself.

"In my report of last year I referred to the fact that on the average 22,750,000 tons of cotton stalks are each year burned or plowed under, or otherwise wasted. These stalks have a woody structure which lends itself readily to treatment by the sulphite process, yielding a fair proportion of fiber well suited for the production of paper of the lower grades. It is of course not feasible to attempt the removal of the bark, but this is so broken up and distributed through the sheet as to be unobjectionable in papers for a wide variety of use. There are, however, undoubted difficulties in the way of the preliminary handling, transport and storage of the material by reason of its bulk."

The Stuart W. Cramer Company.

A corporation has been organized with the above name, of which Stuart W. Cramer of Charlotte is president and treasurer; John T. Cramer, vice-president; John C. Watson, secretary; William B. Hodge, manager. The authorized capital is $100,000, of which $25,000 has been paid in.

The company will make a specialty of the manufacture of humidifying, conditioning and ventilating apparatus for textile establishments and undertake their installation on contract. A factory is being erected near Mr. Cramer's office in Charlotte. His engineering and contracting business will be conducted separately, although it will be the exclusive selling agent for the manufacturing company.

Besides the manufacture of air conditioning and humidifying apparatus the company will manufacture Mr. Cramer's patent automatic regulators for such systems. These regulators are intended for application either to the Cramer system or other existing equipments.

Appreciates the Dyeing Department.

The Morgan Co-operative Industries.
Boston, Mass., Feb. 18, 1908.

Editor Textile World Record:

Enclosed please find my check for another year's subscription.

I have been requested by Mr. Helms to direct the handicrafts and the dyeing of carpet for rugs here and have been chosen for this work because of better colors than other "Arts and Crafts" workers have produced. Whatever knowledge I may have gained in the art of dyeing has come in no small degree from the study of your publication, for which please accept my sincere thanks.

Yours truly,
S. J. E. Solley.

Co-operative Advertising.

All advertising of trademarked goods is retail advertising in the end.

The retail counters may be scattered all over the continent, thousands of miles away from the advertiser, but the results work themselves out in single sales, to one customer after another, there at the retail counter.

The Advertising Manufacturer may count his business in millions, but it is a business made up of retail sales. And,—for every two cents of profit that the advertising manufacturer counts,—three, or four, or six cents of profit have gone to the retail merchant who hands the advertised goods to his customer.—Delineator Bulletin for Advertisers.

The Lawrence Textile School.

This school, whose inception and development have been noted in successive issues of the Textile World Record, has recently been organized by the election of the following commission: Dr. M. F. Sullivan, chairman; Walter H. Summersby, agent, Atlantic Cotton Mills; John B. Cameron, wood worker and machinist; James P. Barnes, designer at the Washington Mills; Augustine X. Dooley, attorney; William H. Dooley, who is instructor at the Lawrence High School, will be the secretary of the commission and principal of the textile school.

Tangol.

One of the many uses for which Tangol, the new vegetable glue, is recommended is a dressing for yarns. If properly applied to cotton yarns, it is claimed that it will prevent chafing, the dusting of China clay, and it will make the warps stronger and smoother; linen yarn will be made stronger by its use and less liable to break, it will weave tighter and give a better turn off per loom. With woolen and worsted warps it is used in place of glue size to make the yarn less brittle and prevent breakage. It has been in use in European mills for some time; in the United States it is handled by the Arabol Manufacturing Company, 100 William St., New York, who will readily furnish all information desired.

Trade of Bradford.

It is interesting to note that the shipments of cloth, mostly woolens and worsteds, from Bradford, Eng., to the United States, has more than doubled in the last decade, the amount in 1907 reaching $16,499,673. The larger part of this sum represents high-grade fabrics of superior design and finish.

The present prosperity of Bradford is built on a combination of natural advantages and foresight. In 1854 the Bradford Corporation paid $950,000 for the Bradford Waterworks Company and spent large sums in extending and developing the water supply to provide a plentiful supply of soft, clean water. The soft, damp atmosphere is an important factor in spinning and weaving. The mill operatives are generally of the best and work up through the departments of the mill from bobbin boy and doffer to spinner, drawing-in girl, and finally to weaver, picking up skill and aptitude for manufacturing high-grade goods, more highly developed in each succeeding generation. This progressive skill and the fact that more than ever the technical side of manufacturing is being studied insures Bradford a leading position in woolen manufacturing.

A New Textile School in Scotland.

In the closing weeks of the year, the contracts for the above institution were signed, and building operations have been commenced. The site of the college is that formerly occupied by the Victoria Mills, which were destroyed by fire in June, 1905, and had not been rebuilt. Situated close to the railway station, it is admirably suited for the purposes of a central school.

The estimates for the building amount to $60,000, and the cost of the site to $8,500, while the remainder of the $98,000 received from the Education Department and raised by subscription, will be devoted to equipment, and laying out of the grounds. The style of architecture is the classic Renaissance.

This college is to be essentially a school of woolen manufacture for Scotland. The main building consists of two floors, each 161 by 54 ft. On the ground floor will be situated two textile lecture rooms, laboratories for pattern analysis, textile testing, dyeing, color and microscopic work, electricity, physics, mechanics, textile museum, principal's room, and teachers' room. On the upper floor accommodation is provided for instruction in pure and applied art, building construction, and chemistry, with a lecture hall and governors' room. Behind the main building is placed a shed extending to 9,000 square feet. This shed will be taken up entirely by the textile machinery of the school. Provision is to be made for forty hand looms for experimental purposes, with warping and winding apparatus; also yarn store. The power department will comprise a set of carding machines, a small mule, twisting frame, warp and weft winding machines, a small warp mill, types of every description of power loom used in fancy woolen and worsted weaving. The power will be supplied by a 25 h. p. gas engine, while the lighting of the school will be by incandescent gas, and the heating by hot water pipes and radiators.

Good Enough to Eat.

An unusual case has recently occurred in connection with the importation of olive oil for manufacturing purposes.

A firm of Boston importers sold to the Arlington Mills a number of casks of olive oil at the market price for good quality for manufacturing purposes. The price was of course based on the duty for such oils.

When the shipment arrived the appraisers advanced the duty to 40 cents a gallon, claiming that the quality was so good that the oil was edible and therefore duty should be paid as a food product. Of course it was intended for no such purpose and the importers have filed a protest.

The first selection or first pressing of the olives is used for food purposes, salad oil, etc. The final pressing and grinding to extract the last residue of oil is what is sold for manufacturing purposes. It seems that this year's crop is of such a remarkably high quality that the lower grade product is so good that the government experts pronounced it fit to eat and therefore assessed the higher duty.

"London Shrunk" Process.

All goods tend to stretch both in length and width under the finishing treatment, and it is therefore necessary to submit them to a shrinking process before finally making them up into the completed article. Otherwise, should the goods, for instance, go to a tailor, a perfect fitting suit would lose all its smartness in a shower of rain or on exposure to any moisture: the cloth would shrink away from the lining and assume a bedraggled, crumpled appearance, and arguments would, no doubt, result between the unfortunate tailor and his no less unfortunate customer.

One of the best means of obviating the chance of anything so unpleasant arising is the process known as the "London Shrunk," and it is claimed for this method that it effects a more thorough and in every way more satisfactory shrinkage than any other process in vogue. The common practice, of course, is to shrink the goods by steam, which is blown through a perforated cylinder, around which the material is wound, and afterwards to allow them to dry and cool on a wooden roller. The steam pervades the whole of the cloth, and a fairly good shrinkage can be obtained in this way. The London process, however, is much more thorough.

In London it is usual to measure and examine the cloth when it first comes from the manufacturer, and, after it has been found to be free from defects, to run it through a tank of water. Too much moisture will be taken up in the immersion, and to prevent the running in the colors which may consequently result, it is the practice to pass the cloth through a pair of squeeze rollers immediately after it has been taken from the tank. As the piece should be passed through the rollers without doubling, the latter should be made wide enough to take the whole breadth of a piece, and 60 inches may be suggested in this connection as the minimum measurement.

As an alternative to roller squeezing, the goods may be put into a hydro-extractor and thus freed of surplus moisture. For the purpose of drying, a horizontal frame of bars, two inches apart, is frequently set up near the ceiling. The bars as a rule are from 60 to 64 inches in length, 2 to 3 inches in width, about 1 1/8 inches thick, and should be rounded on the top side and so set as not to reverse or turn over. The saturated piece of cloth is hung over the tops of these bars, and is then drawn down between the first and second bars, and each pair of bars in turn, to within two or three feet of the floor.

After it has been allowed to stand on the frame for some time and the drying has been about half completed, the position of the cloth should be changed so that the wet loops at the bottom are taken to the top, where the evaporation is naturally quicker. When the piece is completely dry, it is thoroughly shrunk, but it will then present the appearance of a dried rag, looking rough and altogether robbed of the lustre given it by the finishing treatment it underwent at the manufactory.

As the piece cannot possibly be sent to the cutter or counter in its present state, it has to be pressed. This must be done by a plate or hydraulic press, which will not stretch the cloth

again; and, unless it is desired to render the shrinking process absolutely nugatory, a rotary press, which would distend the cloth as much as the manufacturer's finishing treatment, must on no account be used. If the goods are going direct to a retail counter, it is usual to make the pressing hot in order that they may go out completely finished; but if they are meant for the cutter, a cold pressing is in most instances considered sufficient. Hot pressing, however, is always necessary in the case of cloths containing more than one fiber—as, for instance, mercerized worsteds, which, on account of the worsted threads shrinking more than the cotton, will show a puckered-up surface after drying. This class of goods requires to be flattened out, and the hot pressing is requisite. As to the amount of pressing which should be given, the taste of the individual for whom the cloth is meant has to be consulted, and the amount can be varied according to his desires after a first trial.—Textile Mercury.

Streaks in Woolen Goods.

Longitudinal streaks from any cause are a source of trouble, but the blame for them often lies with the finisher. They are more liable to occur in finishing hanks than pieces, as furrows are often produced in washing, and especially in milling, where the pressure of the milling rolls is great and the temperature fairly high, to say nothing of the presence of moisture. Unless the goods are carefully turned over during the process, i. e., if they pass between the bowls always in the same position, the furrows become accentuated and almost ineradicable.

In the first place, raising streaks may be caused by bad setting of the teazle-frames. This makes some of the teazles penetrate deeper than others, so that they loosen the felt more than the other frames. This is a common cause of streaks, and the more so, the lighter the raising is. In raising heavy goods, the frequent changing of the teazles prevents this streaky trouble to a large extent. There is another danger with all slightly raised goods, i. e., that the stiffest part of the teazle is in the middle of it. This is, nevertheless, easily avoided by changing over the goods so that the same teazle does not act always on the same line parallel to the length of the hank or piece. It is perhaps scarcely necessary to mention that the stiffness of the cards or teazles should be less for goods to be slightly raised than for those in which the raising has to be more searching. In light raising the teazles must be old and worn, and the breast roller lowered when commencing so that the teazles only just brush the fabric. To ensure level raising, the cloth must be turned every few rounds, and put on again the other end up.

Another cause of raising streaks is want of uniformity in the moisture in the goods. It is certain that a place comparatively dry will be raised differently from one having more water. Places which are too dry assume a dull velvety appearance and those which are too damp come out such goods have to have a close shear. Then, more lustrous and with less nap. Suppose that drier places appear in the form of grey streaks. The only remedy which, however, is usually effecespecially with goods dyed black or blue, the tual—except in very bad cases—is to dampen the goods again—uniformly this time—and to repeat the raising. As the goods have been raised before, great care is required the second time, and it is important not to allow the teazles to act across the lay of the fibre.

Another important point is to keep the same gig, as far as possible, for pieces of the same width. If a lot of narrow pieces are raised and then a lot of wide ones the middle teazles are more worn than those at the ends of the frame, which have not touched the narrow goods. Hence streaks occur near and parallel to the selvages, due to that part of the piece being more sharply raised than the middle. If only one gig is available, narrow pieces should be shifted often from side to side during the raising, so that the end teazles are used on it as well as those in the middle of the frame. In the case of the lists or selvages raising faster than the centre of the cloth, canvas belts should be stitched round the gig cylinder just where the lists run, so that raising is stopped at the part covered by the canvas.

Raising streaks are often produced when the ends of the pieces have not been properly sewn together. If the seam is not straight—and especially if it is not flattened down—creases are the inevitable result, and the ridges of the creases are raised more than the troughs. This trouble may extend to considerable distances from the seam. It is hardly necessary to say that the gig must be provided with a proper width-stretcher to prevent creases from being formed during the actual raising. No mechanical stretcher, however, is so efficient for this particular purpose as the two attendants pulling out the lists by hand just before they pass under the breast roller.

Care must be taken that streaks due to previous operations are absent when the goods come to the gig. If, for example, there are milling creases, they must be taken out before the stuff is raised. If these creases are only slight, they can be got rid of by wrapping the wet goods tightly on a roller and leaving them there for from twenty-four to thirty-six hours. If this will not do the goods must be run through boiling water and then allowed to cool while wound as tightly and as evenly as possible on a roller. If this does not answer, an expander must be used, submitting the goods to it in a damp state. Any streaks due to faulty execution of processes preceding raising are sure to be made worse when the goods are passed through the gig.

The best method of eliminating mill rigs and creases is to roll the fabric on a roller under strong tension across the breadth, then immerse cloth and roller in a boiling cistern, and boil for three or four hours. Let the fabric cool before unwinding from the roll.—The Textil-Zeitung.

Operatives and Machinery.

A statement made by Mr. Philip Snowden in the House of Commons recently respecting the cotton trade, as to the number of employed and the cotton consumed, has come in for some attention. The statement was that "in all our staple industries the number of people employed in proportion to the output was getting less and less, and in the textile trades the actual number employed was less than in former years. Lancashire had recently been enjoying a period of exceptional prosperity. The volume of raw cotton handled was enormously larger today than it was ten years ago. Yet there had been practically no increase in the number of people employed."

During the ten years many old mills with short mules have gone out of existence, and the number of employes has been reduced in the blowing rooms and in the cardrooms. By the substitution of revolving flat carding engines for roller and clearer cards, large numbers of men have been thrown out of employment. At the new mills every effort has been made to put in longer frames and mules with the intention of reducing the number of workpeople compared with the old conditions. Further, there is the one hour less working on Saturdays, and cleaning is done in the ordinary hours, which is estimated to be another half-hour's less production. Notwithstanding all these changes, and the millions of new spindles and the thousands of looms put down during the past five years, Mr. Snowden tells us that "there has been practically no increase in the number of people employed."—The Cotton Factory Times.

Annual Meeting of the G. Drouve Co.

The G. Drouve Co., of Bridgeport, Conn., at the annual meeting of their directors, held February 3, 1908, elected G. Drouve, president and treasurer, and William V. Dee, secretary of the company. Mr. Dee, who recently resigned from the Railway Age to take an interest in the company, has been appointed general sales manager.

The company manufactures the "Anti-Pluvius" Skylight, of which 125,000 sq. ft. has been installed on the Hoboken terminal of the Delaware, Lackawanna and Western Railroad, and the Lovell Window Operating Device now used in the shops of the New York Central & Hudson River R. R. Co. Harmon, N. Y., the Delaware, Lackawanna and Western R. R. Co., Scranton, Pa. Among their other manufactures are the Drouve Ventilator and Drying Stove. Their appliances are in extended use in textile mills.

Foster Steam Superheaters.

The Power Specialty Company, 111 Broadway, New York City, manufacturers of the Foster patent steam superheater, has secured among recent contracts the following covering installation of this superheater in the boilers indicated:

Home Electric Light & Steam Heating Co., Tyrone, Pa., 840 h. p. in Stirling boilers; Torresdale Filtration Plant, Philadelphia (2d order), 900 h. p. in Heine boilers; Western Clock Manufacturing Co., La Salle, Ill. (2d order), 300 h. p. in return tubular boilers; Bernheimer & Schwartz Brewing Co., New York City, 1900 h. p. in Heine boilers; Garden City Company, Garden City, L. I., 200 h. p. in return tubular boilers; National Sugar Refining Co., Yonkers, N. Y., 1134 h. p. in B. & W. boilers.

Foster superheaters of the independently fired type have recently been ordered by the following companies:

New Jersey Zinc Company, University of West Virginia, Abendroth & Root Manufacturing Co., Seacoast Canning Company.

The last named company has within the past year equipped seven of its plants with the Foster superheater, installed in the return tubular type of boilers.

Economy in Handling Stock.

The Economy Engineering Company (Chicago) has compiled an interesting list of representative firms who use one or more of their steel tiering machines or portable elevators. This list shows that man power applied through hooks and levers is gradually being replaced by a simple device which allows all cases or bales weighing up to one ton to be handled as economically as regards space and accessibility as the empty cases can be handled. The biggest difficulty in handling bulky merchandise is in lifting it up on to or down from the pile. The Economy Engineering Company has solved the problem of handling such things as bales of cotton, bags of wool, cases of goods, etc., by designing and building a successful and simple portable elevator or steel tiering machine, as they call it. It is a compact apparatus, complete in itself and easily operated by one man. It can be readily moved about to any place or position, make the transfer desired, with speed and economy, and in the cases of stock houses or warehouses, leave the stock instantly accessible.

An electric tiering machine also is made which may be connected at any point with the electric circuit by plugs and flexible conduit which do not limit the facilities for removing the apparatus to any desirable point. It is supplied with a small but powerful motor, for lifting the platform upward or downward, which is automatically controlled and allows material to be handled with dispatch.

The Economy Engineering Company will be glad to send a list of firms using this apparatus or refer parties interested to them for information.

Good for the Textile Mills.

When people like James N. Williamson & Sons, at Raleigh and Elon College, N. C., speak in the highest terms of the results obtained with the use of "Avenarius Carbolineum," the wood preserving preparation which is applied like paint, and when these statements are backed up by their practical experience covering fifteen years, there can be little question as to the value of this simple means of wood preservation. Once the advantages are appreciated by trial, second orders follow. Messrs. James & E. H. Wilson of Pittsfield, Mass., who gave it a trial some time ago, have since placed five repeat orders.

Stephenson & Co.

Thomas Park has been engaged by Messrs. Stephenson & Co., woolen and worsted yarn dealers, 240 Chestnut St., Philadelphia, as office and sales manager. Mr. Park has been for some time connected with the Philadelphia branch of the yarn department of Messrs. C. E. Riley & Co., and is well fitted by experience and wide acquaintance in the trade for his new position.

Advertising Manager.

Mrs. Frances A. McIntosh, formerly advertising manager for Norton Co. and Norton Grinding Co. of Worcester, Mass., is now acting in the same capacity for the Buffalo Forge Co., Buffalo Steam Pump Co., and The Geo. L. Squier Mfg. Co., of Buffalo.

New Yarn House.

Walter McCook, for some years past connected with Messrs. Stephenson & Co., worsted yarn dealers, as treasurer and manager, has recently withdrawn and engaged in business on his own account with offices at 576 The Bourse, Philadelphia. Mr. McCook will handle all goods in worsted and woolen yarns, representing the accounts of several well known spinners.

Your Next Move.

M. J. Toohey & Co., manufacturers of mill bandings, braids, tapes, etc., of Fall River, Mass., are sending out a "March to March" calendar, which has a timely illustration representing the Japanese Mikado and Uncle Sam seated at a chessboard and studying the next move.

Recent Textile Patents.

CARDING MACHINE Cylinder and Clothing Therefor. 878,348. Charles A. Cobbett, Newton, Mass.

CLOTH-REFINISHING Device. 877,086. Christian Keck, Crescent Springs, Ky.

DYEING BOBBINS and the Like. Machine for. 878,103. Conrad Wansleben, Crefeld, Germany.

DYEING and Other Machines. Hoisting Apparatus for. 878,399. Joseph Hussong, Camden, N. J., assignor to Hussong Dyeing Machine Co., Groveville, N. J.

EMBROIDERING MACHINE. Shuttle. 876,975. Victor Kobler, Roschach, Switzerland, assignor to the firm of Adolph Saurer, Arbon, Switzerland.

FABRIC. 878,944. R. A. Dunning, Yarmouth, Me.

FABRIC CUTTING Machine. 878,527. August Heil, Muenchen-Gladbach, Germany, assignor to H. Simons, Muenchen, Gladbach, Germany.

FABRICS. Apparatus for Inverting Tubular. 878,995. William B. Palmer, Greenwich, N. Y.

HEMP BRAKE. 878,702. George E. Worth, Barnard, N. Y.

KNITTING MACHINE Dial. 878,792. Henry Garant, Chattanooga, Tenn., assignor of one-half to W. B. Davis, Chattanooga, Tenn.

KNITTING MACHINES. Sectional Plaiting Device for Straight. 878,724. Paul Guenther, Dover, N. J.

LACE AND SIMILAR FABRICS. Machine for Stretching and Pressing. 878,712. Anna C. Dee, Cincinnati, O.

LOOM GRIPPER Needle. 877,270. Otto Wahle, Deutsch-Brod, Austria-Hungary, assignor to Heinrich Schnek, Vienna, Austria-Hungary.

LOOM for Producing Textile Fabrics. 878,707. Roberts Beaumont, Leeds, and Thomas Hollis, Shipley, England.

LOOM for Weaving Tufted Fabrics. 878,119. John A. Clark, Worcester, Mass., assignor to Crompton & Knowles Loom Works, Worcester, Mass.

LOOM. Narrow-Ware. 877,511. Charles H. Maxsted, Oakland, Windemere, England.

LOOM. Weft-Replenishing. 878,531. Arthur J. Jackson, Ashton-on-Mersey, England.

LOOM. Weft-Replenishing Mechanism. 878,763. Josef Bim, Vienna, Austria-Hungary, assignor to Union Bank, Vienna, Austria-Hungary.

LOOM. Weft-Replenishing. 878,337. Wm. H. Brothers, Dedham, Mass., assignor to Crompton & Knowles Loom Works, Worcester, Mass.

LOOM STOP Mechanism. Automatic. 878,813. Elmer E. Lovering, Dracut, and Joseph A. Pelletier, Lowell, Mass.

LOOM SHUTTLE. 877,108. Henry Murphy, Lowell, Mass., assignor, by direct and mesne assignments, to Draper Co., Hopedale, Mass.

LOOM-SHUTTLE Checking and Releasing Mechanism. 877,223. Frederick Ott, South Bethlehem, Pa.

LOOM-SHUTTLE Motion. 878,148. Martin Moul, Hanover, Pa.

LOOM-SHUTTLE Tension Device. 878,720. Ernest Gerhardts, Westbrook, Me.

SPINNING-FRAME Saddle. 877,020. John H. Turcotte, Indian Orchard, Mass.

SPINNING MACHINE. 876,960. Timothy A. Harrington and Alexander Barrie, Natick, R. I.

SPINNING MACHINE. Yarn. 877,917. Leon Dugauquier, Houdeng-Goegnies, Belgium.

SPINNING MACHINE Traveler Ring. 977,084. Charles W. Jackson and William A. McVicker, Reidsville, N. C.

SPINNING SPINDLE and Bearing Therefor. 875,503. Charles H. Chapman, Winchester, Mass.

SPINDLES OF FLY-FRAMES. 869,044. William H. Arnold-Forster, Burley in Wharfdale, England.

This invention relates to improvements in apparatus for doffing the spools from the spindles of fly spinning frames, and has for its object the construction and arrangement of certain parts and mechanism whereby the full spools are removed, or doffed from the spindles in a downward direc-

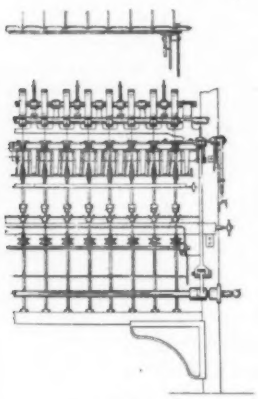


FIG. 1.

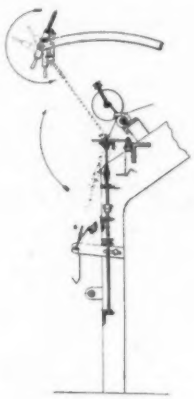
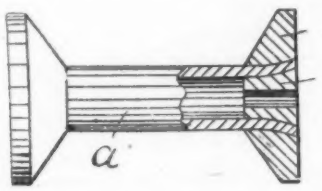


FIG. 2.

tion, and empty spools or tubes replaced on the spindles. According to this invention, the spools are doffed in a downward direction, the head of the spindle being provided with bearings. A considerable number of spindles are doffed simultaneously in one operation and the empty spools placed on the spindles. In order to accomplish this, the spindle is formed in two portions. By constructing the spindles and the doffing mechanism in accordance with this improvement, the disadvantage of unsteadiness is obviated, and a reduction in the labor required for the doffing is effected.

SPOOL. 872,480. Marshall Tilden, Willimantic, Conn.

This invention seeks to produce a spool, or the barrel portion of a spool, formed of a piece of paper wound a plural number of times upon itself, thus producing a tube, or spool body, having slitted ends that may be readily expanded and se-



cured by wedging, or otherwise, in separately formed heads.

The heads of the spool are made separately from the body and may be made of turned wood or compressed pulp, with a central opening whose inner end will just receive the spool body and whose outer end is somewhat greater in diameter, in order that the slitted end portions of said body may be securely locked in the head by wedging, referring now to the form of spool shown in Fig. 5 of the drawings. The body, a, is first slipped into the head until the free, slitted end is flush with the outer face of the head. The body is glued before thus entering it in the head. A slightly tapering bushing, c, of wood or other suitable material, is then forced into the otherwise open end of the body, thus expanding the slitted portion and clamping it firmly to the head.

SHUTTLE. 876,085. Giuseppe Pavia, Allentown, Pa.

SHUTTLE THREADER. 876,465. Joseph N. Le Vasseur-Belisle, Manchester, N. H.

YARN AND THREAD Gassing Machine. 875,711. Joseph Higginson, Jr., Stockport, England.

YARN-TESTING Machine. 876,216. Joseph Moscrop, Manchester, Eng.

WEFT THREADS, Such as Horse Hair and the Like, in the Shed. Mechanism for Inserting Separate. 877,271. Otto Wahle, Deutsch-Brod, Austria-Hungary, assignor to Heinrich Schuek, Vienna, Austria-Hungary.

WOOL. Mordanting. 878,314. Phillips Rogers, Wollaston, Mass.

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There are excellent chapters on cotton baling, describing the different kinds of bales and baling processes, and on the opening and mixing of cotton in the mill, with account of different machines employed, and improved methods of mixing.

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General Electric Co.
Sturtevant, B. F., Co.
Westinghouse Electric & Mfg. Co.

Electric Motors.
——See Motors (Electric).

Elevators.
Salem Elevator Works.

Embossing Machines.
Cameron Machine Co.

Employees' Time Recorders.
Pettes & Randall Co.

Engine Repairs.
Fishkill Landing Machine Co.

Exhaust Heads.
Buffalo Forge Co.
Sterling Blower & Pipe Mfg. Co.
Sturtevant, B. F., Co.

Expansion Joints.
Power Specialty Co.

Fans—Exhaust and Ventilating.
——See Ventilating Apparatus.

Feed Water Heaters.
Scaife, W. B., & Sons.

Feed Water Pumps.
Dean Bros. Steam Pump Works.
Goulds Mfg. Co.

Feed Water Purifiers.
American Water Softener Co.
Dodge Mfg. Co.
Philadelphia Water Purification Co.
Scaife, W. B., & Sons.

Feeds.
——See Automatic Feeds.

Felt Hardeners.
Farrel Foundry and Machine Co.

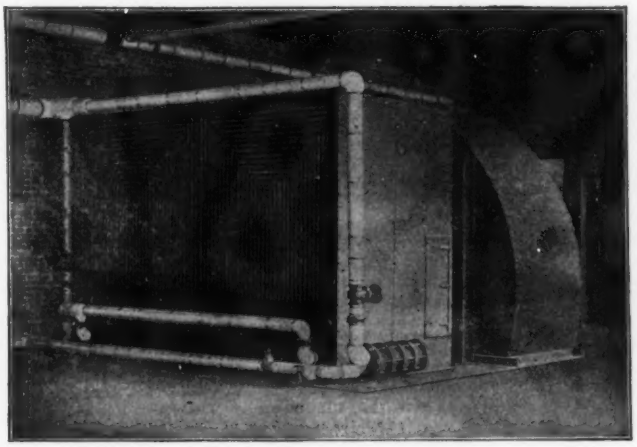
Felting Machinery.
Farrel Foundry and Machine Co.

Fibre Spools.
Cell Drier Machine Co.
Rhode Island Fibre Spool Co.

Alphabetical Advertising Index, with page numbers, follows this list.

Ventilating and Heating

by the



Sturtevant System

Assures a pure, healthy atmosphere which may be maintained at a constant temperature regardless of the weather.

B. F. Sturtevant Co., Boston, Mass.

General Office and Works, Hyde Park, Mass.

New York Philadelphia Chicago Cincinnati London

Designers and Builders of Heating, Ventilating, Drying and Mechanical Draft Apparatus; Fan Blowers and Exhausters; Rotary Blowers and Exhausters; Steam Engines, Electric Motors and Generating Sets; Pneumatic Separators; Fuel Economizers; Forges; Exhaust Heads, Steam Traps, Etc. 410

Filters.
American Water Softener Co.
Hungerford & Terry.
Norwood Engineering Co.
Phila. Water Purification Co., The.
Scaife, W. B., & Sons.

Finishing Machinery.
—See Dyeing, Drying, Bleaching and Finishing.

Fire Brick.
Borgner, Cyrus, Co.

Fire Extinguishers.
Badger, E. B., & Sons Co.

Fire Hose.
Eureka Fire Hose Co.

Fire Hydrants.
Norwood Engineering Co.

Fire Insurance.
Home Insurance Co.

Fire Proof Doors and Windows.
Badger, E. B., & Sons Co.

Flax, Tow, Hemp and Jute Machinery.
Fairbairn-Lawson-Combes-Barbour, Ltd.

Fluted Rolls.
Hood, R. H.
Leigh, Evan A.
Jefferson, Edward & Brother.
Riley, C. E., Company.
Thurston, A. G., & Son.

Flyers.
Bodden, Wm., & Son, Ltd.
Hopkins Machine Works.
Jefferson, Edward & Brother.
Leigh, Evan A.
Textile Machinery Co.

Forges.
Sturtevant, B. F., Co.

Forwarders.
Salvator Transfer, Inc.

Friction Clutches.
—See Clutches.

Friction Cones.
Evans, G. Frank.

Friction Rings (Cork Insert).
National Brake & Clutch Co.

Fuel Economizers.
Buffalo Forge Co.
Sturtevant, B. F., Co.

Fulling Mills for Woolen Goods.
Hunt, Rodney, Machine Co.
Hopkins Machine Works.
Hunter, Jas., Machine Co.
Kenyon, D. R., & Son.

Furnaces (Automatic Smokeless).
Murphy Iron Works.

Garnetts.
Leigh, Evan A.
Smith & Furbush Machine Co.

Gas Blowers and Exhausters.
Sturtevant, B. F., Co.

Gas Engines.
Jones, Lewis.

Gaskets (Superheated Steam).
Power Specialty Co.

Gassing Machines.
Stubbs, Joseph.

Gauges.
Crosby Steam Gage & Valve Co.
Walworth Manufacturing Co.

Gears.
Farrel Foundry and Machine Co.
New Process Raw Hide Co.

Gear Cutting.
Farrel Foundry and Machine Co.

Gear Cutting Machine.
Whiton, The D. E., Co.

Generating Sets.
Buffalo Forge Co.
Crocker-Wheeler Co.
Sturtevant, B. F., Co.

Geyser Water Heater.
Sargent's Sons, C. G., Corp.

Heating.
—See Ventilating.

Heddles.
Stoddard, Haserick, Richards & Co.

Hoisting Apparatus.
Economy Engineering Co.
Northern Engineering Works.
Yale & Towne Mfg. Co.

Hosiery Boards.
Pearson, J. T.

Hosiery Labels.
Kaumagraph Company.

Humidifying Apparatus.
American Moistening Co.
Buffalo Forge Co.

Hydraulic Rams.
Power Specialty Co.
Walworth Mfg. Co.

Hydro Extractors.
American Tool & Machine Co.
Broadbent, Thomas, & Sons.
Hunt, Rodney, Machine Company.
Riley, C. E., Company.
Stoddard, Haserick, Richards & Co.
Textile Finishing Machinery Co.
Tolhurst Machine Works.

Illuminating Engineer.
Puffer, William L.

Insulating and Braiding Silks.
Sauquoit Silk Mfg. Co.

Insurance (Casualty, Fire and for Loss of Profits.)
Home Insurance Co.

Investments.
Cross Creek Coal Co.

Invoices Discounted.
Cathrall, W. M.

Jacquards.
Halton's, Thomas, Sons.

Knit Goods, Edgings, Trimmings, Etc.
Chapin, Geo. W.
Charles, W. B.
Cheney Bros.
Friedberger-Aaron Mfg. Co.
Krout & Fite Mfg. Co.
Weimar Bros.

Knit Goods, Finishing Machines, Crochet, Etc.
Hunt, Rodney, Machine Company.
Merrow Machine Co., The.
Nye & Tredick Co.
Robinhold Machine Co.
Scott & Williams.
Union Special Machine Co.
Willcox & Gibbs Sewing Machine Co.

Knitting Machine Cylinders.
Paxton & O'Neill.
Stafford & Holt.

Knitting Machinery.
Boss Knitting Machine Co.
Brinton, H., & Co.
Claes & Flentje.
Cooper, Chas.
Crane Mfg. Co.
Excelsior Knitting Machine Mfg. Co.
Gormly, Robt. W., & Co.
Grosser Knitting Machine Co.
Hemphill Mfg. Co.
Jenckes, E., Mfg. Co.
Jones, Lewis.
Lamb Knitting Mach. Mfg. Co.
Leighton Machine Co.
Mayo, Geo. D., Knitting Machine Co.
Mayo Knitting Machine & Needle Co.
National Automatic Knitter Co.
Nye & Tredick Co.
Paxton & O'Neill.
Ruth Machine Co.
Scott & Williams.
Stafford & Holt.
Standard Machine Co.
Taylor, James.
Tompkins Bros. Co.
Walter & Co.
Walther, Otto.
Wildman Mfg. Co.

Knitting Needles and Supplies.
Breedon's, Wm., Son.
Brinton, H., & Co.
Continental Latch Needle Company.
Cooper, Chas.
Corey, Wm., Co.
Crane Mfg. Co.
Dodge Needle Co.
Excelsior Needle Co.
Grosser Knitting Machine Co.
Ives, L. T., Co.
Lamb Knitting Machine Mfg. Co.
Keystone Latch Needle Co.
Mayo Knitting Machine & Needle Co.
Page Needle Co.
Ruth Machine Co.
Wardwell Needle Co.

Lamps, Incandescent.
General Electric Co.
Pettingell-Andrews Co.
Westinghouse Electric & Mfg. Co.

Loom Pickers.
Garland Mfg. Co.

Looms.
Crompton & Knowles Loom Works.
Draper Company.
Kilburn, Lincoln & Co.
Leigh, Evan A.
Lowell Machine Shop.
Mason Machine Works.
Stafford, Geo. W., Co.
Stoddard, Haserick, Richards & Co.
Whitin Machine Works.

Loopers.
Beattie Machine Works.
Hepworth, John W., & Co.
Leighton Machine Co.

Lubricants.
Borne, Scrymser Co.
Dixon, Jos., Crucible Co.

Lubricators.
Detroit Lubricator Co.
Walworth Mfg. Co.

Lumpers.
Gerry, George, & Son.
Schofield, Wm., Co.

Machine Designers.
Adams, A. L.
Cameron Machine Co.

Machinery Dealers.
Jefferson, Ed., & Bro.
Lamb, J. K., Textile Mach. Co.
Schofield, Geo. L.
Taylor, James.

Machinists.
Adams, A. L.
Cameron Machine Co.

Machinists' Tools.
Whitin, The D. E., Co.

Mails.
Walder, J.

Marking Brushes.
Universal Fountain Brush Co.

Measuring and Folding Machines.
Adams, A. L.
Curtis & Marble Machine Co.
Elliott & Hall.

Mechanical Draft.
American Blower Co.
Buffalo Forge Co.
Massachusetts Fan Co.
Sturtevant, B. F., Co.

Mechanical Draughtsmen.
Cameron Machine Co.

Mechanical Engineers.
American Blower Co.
Buffalo Forge Co.
Gilbreth, Frank B.
Philadelphia Drying Machinery Co.
Sturtevant, B. F., Co.

Mechanical Stokers.
Murphy Iron Works.

Mercerisers.
Globe Dye Works Co.
Home Bleach & Dye Works.
Lorrimer, Wm. H., Sons Co.

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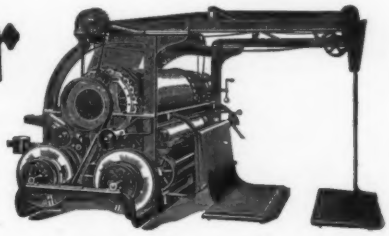
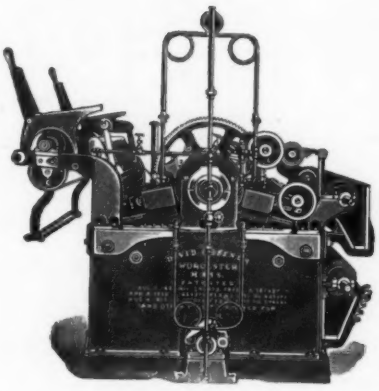
David Gessner

Worcester, Mass.

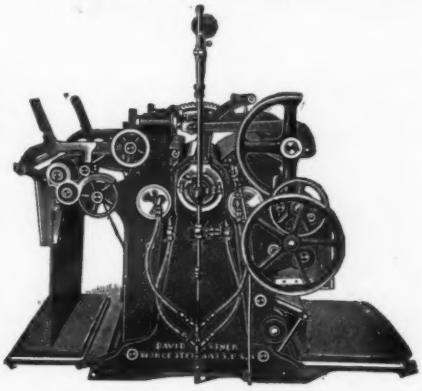




Latest Improved Cloth Finishing Machinery

—

Napping Machines and Presses a Specialty



SIMPLICITY

THE K-A IDEA

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Manufacturers of the

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and other

TEXTILE **ECONOMY** DEVICES

New ***INVENTIONS*** *in Mechanical Textile Devices Developed and Exploited.*

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Butterworth, H. W., & Sons.
Klauder-Weldon Dyeing Machine Co.
Smith, Drum & Co.
Textile Finishing Machinery Co.

Metallic Fire-proof Window Frames and Sashes.
Badger, E. B., & Sons Co.

Metallic Packing.
Power Specialty Co.

Mill Architects.
—See Architects and Mill Engineers.

Mill Builders and Engineers.
Ferguson, John W.

Mill Supplies.
American Supply Co.
Bamford & Smith.
Buckley's, Benjamin, Sons.
Crosby Steam Gage and Valve Co.
Easton-Burnham Co.
Eureka Fire Hose Co.
Garland Mfg. Co.
Jefferson, Ed., & Bro.
Lane, W. T., & Bro.
Leigh, Evan A.
Murphy, E. W., & Co.
Philadelphia Drying Machinery Co.
Pratt, R. C.
Riley, C. E., Company.
Richardson Bros.
Shaw, Victor, Ring Traveler Co.
Stephenson Mfg. Co.
Stoddard, Haserick, Richards & Co.
Thurston, A. G., & Son.
Vandegrift, Elias T.
Walworth Manufacturing Co.

Motors (Electric).
Buffalo Forge Co.
Crocker-Wheeler Co.
General Electric Co.
Sturtevant, B. F., Co.
Westinghouse Electric & Mfg. Co.

Napping Machinery.
Birch Bros., Somerville Machine Wks.
Buhlmann, A. W.
Curtis & Marble Machine Co.
Gessner, David.
Jones, Lewis.
Leigh, Evan A.

Noils (Silk).
Malcolm Mills Co.
Ryle, Wm., & Co.

Oil Cups.
Walworth Manufacturing Co.

Oils.
Borne, Scrymser Co.
Burckhardt & Co.
Harding & Fancourt.
Murphy, E. W., & Co.
New York & New Jersey Lubricant Co.
Stephenson Mfg. Co.
Zurn, O. F., Co.

Overhead Track and Trolley Systems.
Northern Engineering Works.

Overseaming Machines.
Merrow Machine Co.
Willcox & Gibbs Sewing Machine Co.

Packings (Metallic).
Power Specialty Co.

Paints (Wood Preserving).
Carbolineum Co.

Pantagraphs for Mill Engraving.
Johnson, C. A., & Co.

Paper.
Merwin Paper Co.
Richardson Bros.

Paper Boards.
Merwin Paper Co.

Patent Solicitors.
Crosby & Gregory.
Howson & Howson.
Industrial Law League Inc.

Perforated Metals.
Hopkins Machine Works.

Peroxide of Sodium.
Roessler & Hasslacher Chemical Co.

Pipes and Fittings.
Pancoast, Henry B., & Co.
Scaife, W. B., & Sons.
Walworth Manufacturing Co.

Pneumatic Conveying.
—See Ventilating.

Portable Hoists.
Economy Engineering Co.

Power Transmission Machinery.
Almond, T. R., Mfg. Co.
American Drying Machinery Co.
American Mfg. Co.
American Pulley Co.
Cell Drier Machine Co.
Cresson, Geo. V., Company.
Evans, G. Frank.
Farrel Foundry and Machine Co.
Hunt, Rodney, Machine Company.
Hunter, Jas., Machine Co.
Kilburn, Lincoln & Co.
Philadelphia Drying Machinery Co.
Plymouth Cordage Co.
Reeves Pulley Co.
Saginaw Manufacturing Co.
Schofield, Wm., Co.
Sellers, William, & Co.
Textile Finishing Machinery Co.
Tolhurst Machine Works.

Preparatory Machinery (Cotton).
Howard & Bullough Am. Machine Co.
Kitson Machine Co.
Leigh, Evan A.
Riley, C. E., Company.
Saco & Pettee Machine Shops.

Presses.
Boomer & Boschert Press Co.
Butterworth, H. W., & Sons Co.
Curtis & Marble Machine Co.
Gessner, David.
Hart, Charles.
Minnich Machine Works.
Phila. Drying Machinery Co.
Spence & Rideout.
Textile Finishing Machinery Co.
Woonsocket Machine & Press Co.

Press Papers.
Merwin Paper Co.
Richardson Brothers (Importers and Dealers).

Pressure Regulators.
Crosby Steam Gage & Valve Co.
Walworth Mfg. Co.

Pulleys.
—See Power Transmitting Machinery.

Pumps.
Dean Bros. Steam Pump Works.
Goulds Mfg. Co.
Hunt, Rodney, Machine Company.
Philadelphia Drying Machinery Co.
Textile Finishing Machinery Co.

Pump Governors.
Crosby Steam Gage & Valve Co.
Dean Bros. Steam Pump Works.
Walworth Mfg. Co.

Purifying & Filtration Plants.
Hungerford & Terry.
Norwood Engineering Co.
Philadelphia Water Purification Co.
Scaife, W. B., & Sons.

Quillers.
Foster Machine Co.
Payne, G. W., & Co.
Universal Winding Co.

Rag Pickers.
Schofield, Wm., Co.
Smith & Furbush Machine Co.

Ramie Tops and Noils.
Tierney, Frank A.

Raw Hide Gears.
New Process Raw Hide Co.

Reed and Harness Manufacturers.
American Supply Co.
Garland Mfg. Co.
Walder, J.

Reducing Valves.
Crosby Steam Gage & Valve Co.
Walworth Mfg. Co.

Regulators (Pressure).
Crosby Steam Gage & Valve Co.
Walworth Mfg. Co.

Ribbon Cutters.
Cameron Machine Co.

Ribbons.
Cheney Bros.

Ring Travelers.
DeHaven Mfg. Co.
Shaw, Victor, Ring Traveler Co.

Roofing.
Barrett Mfg. Co.
Standard Paint Co.

Roller Leather.
Jefferson, Edward & Brother.

Rolls (Rubber Covered).
American Wringer Co.

Rope.
American Mfg. Co.
Plymouth Cordage Co.

Rope Transmission.
American Mfg. Co.
Cresson, Geo. V., Company.
Hunt, Rodney, Machine Company.
Plymouth Cordage Co.

Roving Cans.
Hill, James, Mfg. Co.
Standard Fibre Co.

Ruberoid Roofing.
Standard Paint Co.

Scallop Machines.
Merrow Machine Co.

Schools.
International Correspondence Schools.
Lowell Textile School.
New Bedford Textile School.
Philadelphia Textile School.

Secondhand Machinery.
—See Mchry. Dealers, also classified Ads.

Separators (Yarn).
Draper Co., The.

Sewing Machines and Supplies.
Arlington Mch. Wks. (Arthur Birch, prop.)
Birch Bros., Somerville Machine Wks.
Curtis & Marble Machine Co.
Dinsmore Mfg. Co.
Fales, L. F.
Textile Finishing Machinery Co.
Union Special Machine Co.
Walter & Co.
Willcox & Gibbs Sewing Machine Co.

Shafting, Hangers, Etc.
—See Power Transmission Machinery.

Shearing Machinery.
—See Dyeing, Drying, Bleaching and Finishing.

Sheet Metal Work.
Scaife, W. B., & Sons.
Sterling Blower & Pipe Mfg. Co.

Shell Rolls.
Thurston, A. G., & Son.

Shoddies.
—See Wool Shoddies.

Shuttles.
—See Bobbins, Spools, Shuttles, Etc.

Silk Machinery.
Arlington Mch. Wks. (Arthur Birch, prop.)
Butterworth, H. W., Sons Co.
Leigh, Evan A.
Mason Machine Works.
Stoddard, Haserick, Richards & Co.
Textile Finishing Machinery Co.

Silk Mill Supplies.
Hall, I. A., & Co.

Silk noils.
Fawcett, Hughes.

Singe Plates.
Arlington Mch. Wks. (Arthur Birch, prop.)
Butterworth, H. W., Sons Co.
Taunton, New Bedford Copper Co.
Textile Finishing Machinery Co.

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The One Dependable Roofing

for all buildings devoted to textile manufacture. Meets every requirement. Most durable roofing known.

"The Roofing with a Record."

RUBEROID ROOFING

Trade Mark Reg. U. S. Pat. Office.

Standard for 16 years.

Fire Resisting and Acid Proof

Resists great heat; not affected by climatic changes. Will not melt, crack, rot or corrode.

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100 William St., New York.
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We import a most complete and extensive line of **Cotton, Silk, Worsted, Woolen and Fibre Machinery, Mill Supplies, Egyptian Cotton and Burlaps.** Representing the

Haserick

leading foreign manufacturers and dealers and keep thoroughly up with the latest inprovements in Textile Machines. We should be pleased to com-

Richards

municate with parties contemplating any additions or changes in mill equipments and to send circulars describing at length, our machines and supplies.

& Co.

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PHILADELPHIA OFFICE, THE ARCADE
SOUTHERN OFFICE, CHARLOTTE, N. C.

Singeing Machines.
Arlington Mch. Wks. (Arthur Birch, prop.)
Butterworth, H. W., Sons Co.
Curtis & Marble Machine Co.
Leigh, Evan A.
Philadelphia Drying Machinery Co.
Smith, Drum & Co.
Stubbs, Joseph.
Textile Finishing Machinery Co.

Sizing, Starch and Gums.
American Diamalt Co.
Arabol Mfg. Co.
Consolidated Rendering Co.
Stein, Hirsch & Co.

Skylights.
Drouve, G., Co.

Slashers.
Leigh, Evan A.
Lowell Machine Shop.
Riley, C. E., Company.

Soaps.
Dobbins Soap Mfg. Co.
Nicetown Mfg. Co.
Zurn, O. F., Co.

Spindles.
Bamford & Smith.
Bodden, Wm. & Son, Ltd.
Buckley's, Benjamin, Sons.
Draper Company.
Easton-Burnham Co.
Hopkins Machine Works.
Jefferson, Edward & Brother.
Leigh, Evan A.
Riley, C. E., Company.
Stoddard, Haserick, Richards & Co.
Vandegrift, Elias T.

Spindle Tubes.
Bamford & Smith.
Riley, C. E., Company.
Stoddard, Haserick, Richards & Co.
Vandegrift, Elias T.

Spinning Rings.
Draper Company.
Howard & Bullough American Machine Co.
Whitinsville Spinning Ring Co.

Spinning Tubes.
Buckley's, Benjamin, Sons.
Jefferson, Edward & Brother.

Spools.
—See Bobbins, Spools, Shuttles, Etc.

Spoolers.
Draper Company.
Easton & Burnham Machine Co.
Lindsay, Hyde & Co.
Lowell Machine Shop.
Payne, George W., & Co.

Stacks.
Scaife, W. B., & Sons.

Steam Boilers.
Scaife, W. B., & Sons.

Steam Boiler Insurance.
Hartford Steam Boiler Inspection & Insurance Co.

Steam Engines.
American Blower Co.
Arlington Mch. Wks. (Arthur Birch, prop.)
Buffalo Forge Co.
Fishkill Landing Machine Co.
Hooven, Owens & Rentschler Co.
Sturtevant, B. F., Co.
Textile Finishing Machinery Co.

Steam Heating.
American Blower Co.
Mass. Fan Co.

Steam Jacket Kettles.
Badger, E. B., & Sons Co.

Steam Pumps.
Dean Bros. Steam Pump Works.
Goulds Manufacturing Co., The.
Walworth Mfg. Co.

Steam Specialties.
Buffalo Forge Co.
Butterworth, H. W., Sons Co.
Crosby Steam Gage & Valve Co.
Sargent's Sons, C. G., Corp.
Sturtevant, B. F., Co.
Textile Finishing Machinery Co.
Walworth Manufacturing Co.

Steam Traps.
Albany Steam Trap Co.
American Blower Co.
Buffalo Forge Co.
Sturtevant, B. F., Co.
Walworth Mfg. Co.

Steel Frame Construction.
Scaife, W. B., & Sons.

Stop Motion for Knitting Machines.
Boss Knitting Machine Works.
Ruth Machine Co.

Stop Motion for Looms.
—See Warp Stop Motions.

Superheaters, Foster.
Power Specialty Co.

Tanks and Towers.
Chicago Bridge & Iron Works.

Tanks, Tubs and Vats.
American Water Softener Co.
Cypress Lumber Co.
Hall, Ames H., Son & Co.
Hopkins Machine Works.
Hunt, Rodney, Machine Company.
Textile Finishing Machinery Co.
Tolhurst Machine Works.
Scaife, W. B., & Sons.
Stearns, A. T., Lumber Co.
Woolford, G., Tank Mfg. Co.

Tapes, Braids and Edgings.
Chapin, George W.
Friedberger-Aaron Mfg. Co.
Krout & Fite Mfg. Co.
Maurer, F. W., & Sons Co.
Weimar Bros.
Wick Narrow Fabric Co.

Telephones.
Pettes & Randall Co.

Temples.
Draper Co.

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Textile-Engineer.
Buhlmann, A. W.

Textile Schools.
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Thin Place Preventers (Automatic).
Clayton & Bentley Co.

Thread Guide (Adjustable).
Palmer, I. E., Co.

Tiering Machines.
Economy Engineering Co.

Top Cutting Machines.
Robinhold Machine Co.
Wildman Mfg. Co.

Trade Mark Stamps.
Kaumagraph Co.

Trolleys.
Yale & Towne Mfg. Co.

Trucking.
Salvator Transfer, Inc.

Trucks.
Bailey, Frank.

Turbines.
—See Water Wheels.

Twine.
American Mfg. Co.
Plymouth Cordage Co.
Richardson Bros.

Twisting Machinery.
Brockway & Meckenstrum.
Jefferson, Edward & Brother.
Lowell Machine Shop.
Smith & Furbush Machine Co.

Valves.
Crosby Steam Gage & Valve Co.
Walworth Mfg. Co.

Variable Speed Transmission.
Cail Drier Machine Co.
Reeves Pulley Co.

Ventilating Apparatus.
American Moistening Co.
American Blower Co.
American Drying Machinery Co.
Berry, A. Hun.
Buffalo Forge Co.
Crocker-Wheeler Co.
Drouve, G., Co.
Massachusetts Fan Co.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Tolhurst Machine Works.
Sargent's, C. G., Sons.
Schnitzler, Chas. H.
Sterling Pipe & Blower Co.
Sturtevant, B. F., Co.
Walworth Mfg. Co.

Warpers.
Draper Company.
Entwistle, T. C., Co.
Lowell Machine Shop.

Warping and Beaming Machinery.
Altemus, J. K.
Draper Company.
Entwistle, T. C., Co.
Smith & Furbush Machine Co.

Warp Stop Motions.
American Textile Appliances Co.
Draper Company.
Kip-Armstrong Co.

Warp Tying Machines (Automatic).
Barber-Colman Company.

Washers (Cloth).
Arlington Mch. Works (Arthur Birch, prop.)
Birch, Arthur, Arlington Mch. Works.
Birch Bros., Somerville Machine Wks.
Butterworth, H. W., & Sons Co.
Hunt, Rodney, Machine Co.
Hunter, Jas., Machine Co.
Kenyon, D. R., & Son.
Philadelphia Drying Machinery Co.
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A manager of cotton spinning wishes to represent in France some important American cotton spinner of fine numbers, who desires to export his product. It can be done to advantage. Highest references. Address, Export, care Textile World Record, Boston

Superintendent Wanted for Hosiery Mill.

We desire to obtain the services of a Superintendent to take charge of a mill making several hundred dozen per day of Half Hose and Misses' Ribbed Hose. He must be thoroughly competent in every branch of the business, and thoroughly practical. We want a man that will stay in the mill and not spend his time in the office. The mill is situated on the outskirts of city. It has been operated for several years. It is now in good condition and not run down. Address with experience and references, "M. R. D.," care Textile World Record, Boston, Mass.

Practical Knitter Wanted
WITH SMALL CAPITAL

to install and operate on commission knitting machinery for merino hosiery and sweaters. Address "Commission," care Textile World Record, Boston, Mass.

WANTED—AN EXPERIENCED SALESMAN

to carry as a SIDE LINE a complete line of Underwear Forms, Spools, etc. One visiting the mills in the Mohawk Valley preferred. Good commissions.

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Tuscan Softener, Turkey Red Oil, (all grades)
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The most practical, surest, and quickest way in the world for ambitious textile workers to secure promotion is offered by an institution through whose assistance thousands of men have already advanced to better positions and larger salaries. They have done this in their own homes, in their spare time, and at an insignificant cost. We will cheerfully explain, free of charge, how we can adapt our plan to **YOUR** personal needs and income if you will write us today, stating the position you would like to secure.
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CONTENTS.

Cotton Fibre—Picking—Carding—Combing—Drawing—Ring and Mule Spinning—Wool—Cleansing—Burring—Woolen Carding—Worsted Carding—Woolen Spinning—Worsted Drawing—Worsted Spinning—Felt—Simple Designs—Sateens—Backed and Ply Fabric—Velvet Jacquard and Leno Cotton—Cost Finding—Woolen and Worsted Warp Dressing—Plain Weaving—Fancy Looms—Jacquards—General Loom Fixing—Spring Needle Knitting—Latch Needle Knitting—Hosiery and Underwear Knitting Machines—Textile Chemistry—Textile Coloring—Mordants—Natural Dyestuffs—Artificial Dyestuffs—Analysis of Fabrics—Textile Calculations—Wet Finishing—Dry Finishing—Processes for Finishing Standard Fabrics—Machines Used.

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Please send, express prepaid, one set Cyclopedia of Textile Work FREE for 5 days' examination. I will send $2 within 5 days and $2 a month thereafter until the special $19.80 price is paid; or will notify you to send for the books at your expense.

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Royalty

A share of the product or profit reserved by the owner for permitting another to use the property, or a percentage paid to the owner of an article by one who hires the use of it.

These definitions of the word "royalty" show exactly the position of the holders of the bonds issued by the **Cross Creek Coal Company** and every ton of coal that the **Cross Creek Coal Company** load, pays into a sinking fund, as a royalty to the bond holders, 10c. As the capacity of the first works on the property will be approximately 2000 tons a day, it means that $40,000 will be available each year to pay on the bonds. As it is the intention of the company to build five such works, it will require but a short time to pay off the bonds, the total issue being but $250,000. From the books of a concern operating in the same seam of coal adjoining us, we find that the

Average selling price is - - -	**$1.97**
Cost of production - - -	**.95**
Net profit per ton - - -	**$1.02**

It will pay the conservative investor to write the

Cross Creek Coal Company,

609 Mutual Life Bldg., Buffalo, N. Y.

The bonds pay 6% interest, payable semi-annually, and subject to prior sale, a bonus of preferred stock goes with the bonds.

Situations Wanted.

The following advertisements are a portion of those of superintendents and overseers, of whom full particulars are on file at this office. Manufactu ers who may be in need of such men may address them in care of Textile World Record, Boston, or state their requirements directly, and the addresses of suitable men will be furnished without charge.

Mr. C. T. Donlevy, a practical mill overseer and superintendent, who has a wide acquaintance with mill men, gives special attention to this department. He would be pleased to hear from any of his friends who may be interested. Address Textile World Record, 144 Congress St., Boston, Mass.

SUPERINTENDENTS.

Agent or Superintendent of a worsted or woolen mill. 45 years of age. Worked on all kinds of woolen goods from cheviots to fine cassimeres, worsteds and cotton worsteds. Familiar with all makes of woolen mill machinery. Could take a position at once. Good reference. 4576, Textile World Record, Boston, Mass.

Superintendent or Overseer of full fashioned knitting. Familiar with full fashioned underwear and hosiery and experienced on Ludwig, Shubert, Selzer, Richter, Cotton, Boesneck, Textile Machine Works, Riddier, Blackburn, Attenbury's, Moses Mellor's Machinery. Prefers a position in the West. Good reference. 4584, Textile World Record, Boston, Mass.

Superintendent or Assistant Superintendent in a cotton warp or thread mill. 28 years of age, married. Worked on all kinds of glazed thread, all numbers, also cotton warps of all kinds. Familiar with all kinds of machinery. Will go any place for a good position. Good reference. 4557, Textile World Record, Boston, Mass.

Assistant Superintendent or designer in a cotton mill. 34 years of age, American, married. Worked on denims, tickings, linings, dress goods, shirtings, cottonades, outings and plaids. Familiar with up-to-date machinery used in different departments in a mill. Will not go West or Canada. Good reference. 4591, Textile World Record, Boston, Mass.

Assistant Superintendent, assistant designer, pattern weaver, or salesman for textile machinery. Position wanted by a man 26 years of age, single. Has worked on woolens and worsteds. Is also a graduate of the Lowell Textile School, three years' course. Understands all kinds of machinery. Good reference. 4571, Textile World Record, Boston, Mass.

Superintendent or Manager in woolen mill, or designer, assistant superintendent, or both in a good mill. Position wanted by a man 55 years of age, American. Worked on fancy cassimeres, suitings, wool and worsted, face goods, kerseys, thibets, ladies' dress goods, cotton warps, plain and fancy, overcoatings, etc. Familiar with all machinery used in woolen mill. Will not go West, South or Canada. Good references. 3991 Textile World Record.

Woolen Superintendent and designer. Worked on men's wear, worsteds, fancy cassimeres, smoking jackets, over-cloth, ladies' dress goods. 28 years of age; English; single. 3234 Textile World Record.

Cotton Superintendent, or superintendent and designer. **Worked on all kinds of cotton, from 20s to 150s. Also large experience on lenos and other fancy goods. Some knowledge of Jacquards. All kinds of cotton machinery. Age 39, married. 2080, Textile World Record.**

Assistant Superintendent or Superintendent of a woolen mill, or in commission house. Position wanted by a man 29 years of age, married, American. Worked on all kinds of woolen goods. Familiar with all kinds of machinery. Good references. 4025 Textile World Record.

Assistant Superintendent in Woolen Mill. Position wanted by a single man who has had experience on kerseys and thibets, and has held position a Assistant Superintendent for three years, but out of work on account of mill being closed; have had a thorough training in the manufacture of goods and in different departments. Good reference. Could take position at short notice and at reasonable wages. 4038, Textile World Record, Boston.

SUPERINTENDENTS.

Superintendent in an Underwear Mill. 35 years of age, married, American. Worked on all grades of men's, women's and children's ribbed underwear. First-class reference. Understands sewing machines. Will not go South or Canada. 3505, Textile World Record, Boston, Mass.

Superintendent of a Woolen Mill, wool, cotton or wool waste buyer. 42 years of age, married. Worked on woolens, plain and fancy, also worsteds. Will go anywhere for a good position. Good reference. 4587, Textile World Record, Boston, Mass.

Superintendent or Agent of a Cotton Mill. Position wanted by a man 47 years of age, married, American. Worked on all kinds of cotton goods and yarns. Familiar with all kinds of machinery. Good references. 4033, Textile World Record, Boston.

Cotton Superintendent of a yarn mill. Familiar with all kinds of yarns, from 20s to 120s. Used to all kinds of American and English machinery. Age 39, married; first-class references. 1364, Textile World Record.

Assistant Superintendent or overseer of weaving in a silk mill. Position wanted by a man 38 years of age, German, married. Has worked on broad silks, ribbons, bindings, webbings, woven labels for shoe factories. Familiar with Crompton & Knowles, Schaum & Uhlinger, Ehrenberg and all kinds of winding and quilling machines. Will not go to Canada, Maine, New Hampshire or Vermont. Good reference. 3819, Textile World Record, Boston, Mass.

Superintendency, or overseer and designer of cotton and raw silk mill, wanted by a practical man 31 years of age, who understands the business thoroughly. Had 15 years' experience here and in Germany and 2 years textile school. Best of references given. 3327, Textile World Record, Boston.

Cotton Superintendent. Has been boss carder, ring spinner and comber on all kinds of cotton yarns, hosiery yarn a specialty. First-class references. Age 44; married. 3025, Textile World Record.

Superintendent Worsted or woolen mill, designer, or both. Position wanted by a man 44 years of age, English. Worked on meltons, beavers, uniform goods, tweeds, worsteds, both men and women's wear, coverts and rain cloth. Understands worsted and woolen machinery. Good references. Will not go West or Canada. Will take a position at short notice. 3938, Textile World Record.

Superintendent of a Cotton Mill. Would consider a position as overseer of weaving or carding. Position wanted by a man 47 years of age, American, married. Worked on plain and fancy white cotton goods, both coarse and fine. Has held the position as superintendent in a number of mills. First class reference. 3321, Textile World Record, Boston, Mass.

Superintendent or Overseer of Weaving in a cotton mill. Position wanted by a man 46 years of age, married, American. Worked on colored and white goods, both fancy and plain. Familiar with Crompton, dobby and box looms; Knowles' dobby and box looms; Mason dobby and box; Whitin and several others. Good references. 4023 Textile World Record.

Superintendent of Knitting Mill. Position wanted by a man 26 years of age, married, American. Is experienced on men's overshirts, balbriggan ribbed goods, fleece and novelties, and is familiar with all kinds of knitting machinery. Good references. 3637, Textile World Record, Boston, Mass.

COTTON WEAVERS.

Overseer of Cotton Weaving. 38 years of age, married. Worked on cotton dress goods, white and colored, lenos, ginghams, sateens, tickings, cottonades and cassimeres. Familiar with the Crompton & Knowles, Lowell, Kilburn, Mason, jacquard and English revolving box looms. Good reference. 4578, Textile World Record, Boston, Mass.

Overseer of Weaving in Cotton Mill, or second hand with a chance for promotion. Position wanted by a man 39 years of age, married, American. Has worked on drilling, duck cloth, sheeting, crash bags, sateens, fancy ginghams and staple goods. Familiar with Crompton, Whitin, Draper, Thomas Butler, Lowell looms. Will not go West, South, Canada or to New York. Good references. 3992 Textile World Record.

Overseer of Weaving. Familiar with shirtings, sheetings, lawns, cambric, ginghams, checks and stripes, union goods, awnings, ducks, drills, light and heavy weight, plain and fancy flannels. 39 years of age, American, first-class references. 3247, Textile World Record, Boston, Mass.

Overseer of Cotton Weaving. 47 years of age. Worked on ducks, lawns, stripes, plaids and all kinds of twilled cotton goods. Familiar with Draper, Lowell, Whitin, Crompton & Knowles looms. Will go any place for a good position. Good reference. 4510, Textile World Record, Boston, Mass.

Overseer of Cotton Weaving. Has worked on plain sateens, fancy bedford cords, jacquard goods, lenos, cotton, silk and mercerized yarns, single and two ply. Familiar with all makes of cotton looms and also jacquards, single and double lift. Will not go West or South. 4503, Textile World Record, Boston, Mass.

Overseer of Cotton Weaving. 44 years of age, English, married. Worked on all kinds of cotton goods, plain and fancy. Familiar with American and English looms. Will go any place for a good position. Good reference. 4508 Textile World Record, Boston, Mass.

Overseer of Cotton Weaving. 39 years of age, married, American. Has worked on automobile tire fabrics, oils and sugar refining fabrics and all heavy duck goods and also plain goods. Familiar with the Crompton & Knowles, Lowell, Whitin and Draper looms. Will go any place for a good position. 4505, Textile World Record, Boston, Mass.

Overseer Cotton Weaving or Second Hand in a large mill. 33 years of age, American. Worked on plain and fancy lenos, sateens, twills, etc. Familiar with the Whitin, Colvin, Mason, Crompton & Knowles and Draper looms. Good reference. Will not go West or South. 4514, Textile World Record, Boston, Mass.

Overseer of Cotton Weaving. A married man, 32 years of age, American. Worked on plain and fancy sateens and jacquard effects. Also all kinds of cotton cloths, particularly fine goods and silks. Familiar with the Draper, Whitin, Colvin and jacquard looms. Good reference. 4516, Textile World Record Boston, Mass.

Overseer of Cotton Weaving. Worked on lenos, checks, plaids, fancy stripes, drop box and plain looms. First-class references. Will not go West or to Canada. Age 36, English. First-class references. 1855, Textile World Record.

Overseer of Weaving. Englishman; 33 years of age; married; worked on fine lawns, sheetings, sateens and fancies, coarse drills, twills, bicycle cloth, automobile cloth for tires. Familiar with Whitin, Crompton, Knowles, Mason, Kilburn & Lincoln and Lowell machines. 3073, Textile World Record.

Overseer of Weaving or loom fixing. Worked on cotton, woolen, silk. Used to Crompton & Knowles looms, both box and plan, Lewiston looms, Mason, Colvin, Whiting, Patterson, etc. Age 43; Scotch; married. 3216, Textile World Record.

Overseer of Weaving. Position wanted by a man 39 years of age, American. Has worked on unions, cassimeres, shirtings and overcoatings. Is familiar with Crompton & Knowles looms. Good references. 3601, Textile World Record, Boston, Mass.

WOOLEN WEAVERS.

Overseer of Weaving and designing in a woolen mill. Might accept a position as loom fixer at good wages. 34 years of age, single. Worked on men's wear, ladies' dress goods, cotton warp, blankets, etc. Familiar with the Crompton & Knowles looms. Good reference. 4583, Textile World Record, Boston, Mass.

Overseer of Weaving or dressing in a woolen mill. 40 years of age, married. Worked on fancy cassimeres, worsteds, cheviots, worsted piece dyes, ladies' dress goods and blankets. Familiar with the Crompton & Knowles looms. Will not go West, South or Canada. Good reference. 4589, Textile World Record, Boston, Mass.

Overseer of Weaving in a woolen mill. Position wanted by a man 51 years of age, married, American. Worked mostly on ladies' dress goods. Familiar with Knowles looms. New England only. Good references. 4007 Textile World Record.

Overseer of Weaving in a woolen mill. Position wanted by a man 37 years of age, married, American. Worked on beavers, kerseys and worsteds. Familiar with Crompton & Knowles looms. Good references. Could accept a position at once. 4000 Textile World Record.

Overseer of Weaving in a woolen mill. Position wanted by a man 35 years of age, single, American. Worked on all kinds of woolens and worsteds. Familiar with Crompton & Knowles looms. Will go anywhere for good position. Good references. 4020 Textile World Record.

Overseer of Weaving. Worked on worsteds, cassimeres, dress goods, and all kinds of woolen goods. Crompton & Knowles looms. First-class references; American; 45 years of age. 3262, Textile World Record.

Overseer of Weaving. Position wanted by a man, 40 years of age, married, an American. Worked on cheviots, ladies' dress goods, janes and woolen goods of all kinds. Familiar with the Crompton & Knowles looms. Good recommendations. 3725, Textile World Record, Boston, Mass.

Overseer of Woolen Weaving. American, 37 years of age, accustomed to fancy worsteds and woolens, dress goods, etc. Held last position 6 years. Prefers the East. 3397, Textile World Record, Boston.

Overseer of Woolen Weaving. 33 years of age, married. Worked on woolen and worsteds, cotton worsteds and dress goods. Familiar with the Crompton & Knowles looms. Will not go West, South or Canada. Good reference. 4507, Textile World Record, Boston, Mass.

Overseer of Woolen Weaving. 43 years of age, married. Has worked on all kinds of woolen and worsted goods. Understands Crompton & Knowles looms. Would prefer a position in the New England states. Good reference. 4504, Textile World Record, Boston, Mass.

Overseer of Weaving. Position wanted by a man 42 years of age, American, married, worked on all kinds of woolen and worsted goods, familiar with Crompton & Knowles and Crompton & Thayer and Jacquard looms, first class recommendation. 3694, Textile World Record.

Overseer of Woolen Weaving, Second Hand or loom fixer in a good mill. 34 years of age, married. Has worked on fancy woolens, worsteds, blankets, etc. Familiar with Crompton & Knowles looms. Will not go West, South or Canada. Good reference. 4517, Textile World Record, Boston, Mass.

Overseer of Woolen Weaving, 44 years of age, with experience on woolen and worsted cassimeres, dress goods, overcoatings, etc., and on Knowles and Crompton looms. Would like position in the Middle West. 3385, Textile World Record, Boston.

Overseer of Woolen Weaving or assistant designer. Position wanted by a man 33 years of age, married, German-American. Worked on woolen and worsted. Has had 12 years' experience as loom fixer; also textile school training in designing. Worked on high and low grade woolen and worsteds. Prefers a position in the New England States. Good references. 3962 Textile World Record.

CARDERS.

Overseer of Woolen Carding. 36 years of age, American, married. Worked on all kinds of woolen shoddy and cotton mixed goods. Familiar with the different American makes of carding machinery. Will not go to Penn., West, South or Canada. Good reference. 4577, Textile World Record, Boston, Mass.

Overseer of Carding and spinning or woolen carding and spinning. Might accept a position as second hand in a large mill. 38 years of age. Worked on cassimeres, dress goods, overcoatings, horse and bed blankets. Familiar with the D. & F., Lumbard, Furbush, Cleveland and Platt mules. Will not go West, South or Canada. Good reference. 4582, Textile World Record, Boston, Mass.

Overseer of Woolen Carding or garnetting. Married man 44 years of age, American. Worked on all kinds of woolen goods, also cotton and shoddy mixes. Familiar with all kinds of cards and garnet machines. Will not go to Canada. Good reference. 4559, Textile World Record, Boston, Mass.

Overseer of Carding in a Knitting or Hosiery Mill, or Assistant Superintendent. 41 years of age, married. Now employed, but wishes to change. Has worked on all kinds of knit goods, wool, cotton and shoddy mixtures. Is familiar with D. & F., Furbush, Cleveland and Smith cards. Will not go to Canada. Good reference. 4098, Textile World Record, Boston, Mass.

Overseer of Carding in a knitting, woolen or shoddy mill. Position wanted by a man 33 years of age, married, American. Worked on wool, cotton and extract shoddies, dress goods, overcoatings, cassimeres, etc. Familiar with all kinds of carding machines, also J. & B., D. & F. and Bridesburg mules. Will not go to Maine, New Hampshire, Vermont, Massachusetts or Canada. Good references. 4017 Textile World Record.

Overseer of Carding and Frame Spinning. Worked on all kinds of stock, both high and low. 30 years of age; first-class recommendations. 1759, Textile World Record.

Second Hand in Wool Card Room. Position wanted by a married man, 26 years of age. Has worked on all kinds of woolen goods. Is familiar with D. & F. and Lombard cards. Wants a position in the N. E. States only. Good reference. 4082, Textile World Record, Boston, Mass.

Overseer of Carding. American with experience. wants first-class position. Worked on nearly all classes of woolen goods and on machinery used in woolen card room. Best of references. Wants position in the North. $4.00 per day. 3361, Textile World Record, Boston.

Overseer of Cotton Carding. American; 34 years of age; worked on all classes of cotton goods and all machinery used in this work. Would accept a good second hand position. Prefers position in the East. 3393, Textile World Record.

Overseer of Woolen Carding and spinning. Position wanted by a man 42 years of age, American, married. Worked on all kinds of stock, wool, cotton and shoddy mixes, yarns from 1/2 to 6 run. Familiar with all kinds of cards and J. & B. mules. Good reference. Could accept a position at once. 3822, Textile World Record, Boston, Mass.

Overseer of Cotton Carding. 50 years of age, married. Worked on white and colored cotton goods. Has had 25 years of experience as overseer. Good reference. Prefers a position in the New England states. 4515, Textile World Record, Boston, Mass.

Overseer of Woolen Carding. Position wanted by a man 32 years of age, American, married. Worked on all kinds of woolen goods, both high and low grades and hosiery. Familiar with American and English carding machinery. Good references. 3883, Textile World Record.

Overseer of Woolen Carding. Position wanted by a man 53 years of age, American, married. Worked on American and English carding machines, and familiar with all kinds of stock, cotton, wool, and shoddy mixes. Could take position within one week's notice. Good references. 3890, Textile World Record.

DESIGNERS.

Designer on any class of dress goods waistings, mantle cloths, fine shirtings, etc. 3203, Textile World Record.

Designer. Worked on ladies' dress goods, shirtings and flannels and some jacquard designing; first-class recommendations; 33 years of age; married. 3285, Textile World Record.

Designer in a Cotton Mill. Position wanted by a man, 33 years of age, English; has worked on ladies' dress goods, shirtings, ginghams, lenos and jacquard patterns. Will not go west, south or Canada. Good reference. 3780, Textile World Record, Boston.

Designer, Boss Weaver or assistant designer or superintendent in a woolen mill. Position wanted by a man 28 years of age, single, American. Worked on men's wear, worsteds and woolens, dress goods, piece dyed worsteds, cloakings, plain and fancy. Familiar with Crompton & Knowles and Crompton & Thayer looms. Will not go West, South or Canada. Good references. 4010 Textile World Record.

Designer. A married man, 26 years of age. Worked on woolens, cassimeres, worsteds and cotton worsteds. Would like an interview with any manufacturer in need of a first class man. Good reference. 4512, Textile World Record, Boston, Mass.

SUPERINTENDENTS AND DESIGNERS.

Superintendent and Designer, or assistant superintendent or boss weaver in a woolen mill. Position wanted by a man 36 years of age, American, married. Worked on all kinds of woolen and worsted goods, also blankets. Understands all kinds of machinery, has worked in all departments of a mill. Good referencees. 3845, Textile World Record, Boston.

Superintendent and Designer in a woolen mill. Position wanted by a man, 39 years of age, single. Has worked on men's suitings, overcoatings, box cloth, cheviots, covert mixes made from wool, cotton and shoddy. First-class recommendations. 3871, Textile World Record.

Superintendent and Designer. Position wanted by a man 30 years of age, English. Has worked on all kinds of fancy cotton goods, and is familiar with all kinds of cotton looms. Good references. 3682, Textile World Record, Boston, Mass.

Superintendent and Designer in a woolen mill. Position wanted by a man 31 years of age, Scotch-American. Is familiar with woolens, worsteds, thibets, cotton warps, dress goods, broad cloth, cotton worsteds, tourist cloth. All kinds of woolen machines. Will not go West. Good references. 3944, Textile World Record.

Superintendent and Designer. Position wanted by a man 38 years of age; married; worked on men's wear fancy worsteds, cotton worsteds, overcoatings and dress goods. Good references. 3056, Textile World Record, Boston, Mass.

Superintendent, Designer or boss weaver. Position wanted by a man 39 years of age, married. Has worked on woolen and worsted. Would take a position anywhere. First class reference. 3925, Textile World Record, Boston.

Superintendent and designer, or assistant superintendent. Age 34; married. Worked on cloths ranging from all cotton to all wool and worsteds, such as cotton worsteds, jeans, army cloths, kerseys, etc. Excellent references. 3148, Textile World Record.

Superintendent or Designer in a woolen mill. Position wanted by a man 47 years of age, married, American. Worked on all kinds of woolen and worsted goods. Familiar with all kinds of woolen machinery. Four workers in the family. 3977 Textile World Record.

Assistant Superintendent and designer, or overseer of weaving. Position wanted by a man 37 years of age; married; American. Has worked on all classes of woolen and worsted goods, ladies' and men's wear, both fancy and piece dyes. Is familiar with Crompton & Knowles looms. Good references. 3605, Textile World Record, Boston, Mass.

DYERS.

Expert Knit Goods Dyer

With long experience on all kinds of Knit Goods and Hosiery, is open for position after March 15th.

Can reduce cost of dyeing and get better results. Understands handling hosiery from machine to case. Could superintend medium size plant, and look after dyeing, thereby reducing cost. Middle age; first-class habits. Address

"COMPETENT," Care Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a married man 26 years of age. Prefers a position in the middle west on hosiery, raw stock, yarns. Understands wool scouring and carbonizing. Familiar with all makes of machinery and also understands the finishing of hosiery. Good reference. 4567, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man, 43 years of age, married. Worked on carbonized piece dyes, broad cloths, kerseys, worsted dress goods, cloakings, unions, raw stock, wool, shoddy and cotton. Could take a position at once. 4592, Textile World Record, Boston, Mass.

Overseer of Dyeing. 32 years of age, married; worked on woolen, worsted, unions, cotton worsteds, raw stock, cross dyes, cotton worsted yarns; good reference. 4097 Textile World Record, Boston, Mass.

Overseer of Dyeing. Married, 29 years of age. Has worked on raw stock, piece dyes, cotton, wool, worsted yarns and understands carbonizing in the piece or rags. Good reference. Could take a position at once. 4094, Textile World Record, Boston, Mass.

Fancy Dyer. Aged 37; American; married. Cotton, wool and silk. 3158, Textile World Record.

Superintendent of a Bleachery or Dye Works or overseer of mercerizing. Worked on all kinds of goods, including bed spreads, towels, ducks, sheetings, drills, cambrics, cotton flannel, bags, shoe lining and window shades. 42 years of age; married; English. 3274, Textile World Record, Boston, Mass.

Overseer of Bleaching. Position wanted by a man 34 years of age, English, married. Has worked on cotton bed quilts, marcellus and crochet, also yarns. Familiar with the Butterworth machines. Could be employed at short notice. Will not go West or Canada. Good reference. 3836, Textile World Record, Boston, Mass.

Superintendent of a Bleachery or overseer of dyeing. Position wanted by a man 44 years of age, American. Worked on cotton piece dyes, plain and prints, spool cotton, yarns, warps, raw stock and hosiery. Familiar with all kinds of machinery used in an up-to-date bleachery and dye works. Good reference. 1680, Textile World Record, Boston, Mass.

Overseer of Dyeing or Second Hand. American; 25 years of age; worked on woolen piece dyes and raw stock and on different kinds of machinery used in dyeing. Would accept a position anywhere that would mean advancement. 3418, Textile World Record, Boston.

Overseer of Woolen Dyeing. American; 34 years of age; accustomed to broadcloths, kerseys, dress goods, raw stock, piece dyes and to all machinery used in his work. A1 man, with best of recommendations. 3180, Textile World Record.

Overseer of Dyeing. Position wanted by a man 47 years of age. Worked on all kinds of woolen goods, raw stock, piece dyes, skein yarns, union, cross dyes and knit goods. Familiar with the different makes of machinery. Good references. Will not go to Canada. 3942, Textile World Record.

Overseer of Dyeing. Position wanted by a man 34 years of age, married. Familiar with cassimeres, cloakings, cotton worsteds, fancy worsteds, woolens, worsted piece dyes. Familiar with all kinds of woolen and worsted piece dye machinery. Good references. Will not go to New York, New Jersey, Western or Southern States, or to Canada. 3950, Textile World Record.

DYERS.

Overseer of Dyeing. Married man, 42 years of age. Has worked on all classes of woolen goods, raw stock, piece dyes, unions, cotton yarns, underwear and is an expert on hosiery dyeing. First-class reference. 4091, Textile World Record, Boston, Mass.

Overseer of Dyeing, Bleaching, Mercerizing or Dyestuff Salesman. Position wanted by a man 45 years of age, married, English. Has worked on all kinds of woolen and cotton yarns and is familiar with all kinds of dyeing, bleaching and mercerizing machinery. First-class references. 3686, Textile World Record, Boston, Mass.

Boss Dyer or Finisher or superintendent of both in woolen mill. Position wanted by a man 40 years of age, married. Has worked on raw stock, piece dyes, wool, cotton and shoddy, hosiery and underwear yarns, etc. Could take a position at once. Good references. 3979 Textile World Record.

Boss Dyer and Mercerizer in cotton, woolen, silk or hosiery mill. Position wanted by a man 40 years of age, married, American. Worked on wools, unions, silks, hosiery and cops. Familiar with various makes of machinery. Three workers in the family. Will not go West. Good references. 4004 Textile World Record.

Overseer of Dyeing in a cotton mill. Position wanted by a man 37 years of age, married, English. Worked on all standard color for ginghams, knit piece goods for underwear, skein yarns for the thread and shoe lace trade, also bleaching. Will not go West or South. Familiar with Scotch warp machines, Klauder Weldon dyeing machines, reel machine for dyeing knit piece goods. Good references. 4001 Textile World Record.

Boss Dyer in a Woolen Mill. Position wanted by a man 27 years of age, single, English. Worked on piece dyes, woolen and worsted, army and navy indigo blues (synthetic and natural), raw stock. Familiar with Woad vat, Hydrosulphite-Ammonia vat, Bisulphite vat. Good references. 3983 Textile World Record.

Overseer of Dyeing. Position wanted by a man 44 years of age and Scotch. Has worked on wool and worsted yarns, slubbing, piece dyeing, cotton raw stock, long and short chain yarn, chain printing, felt, hosiery and knit goods. Is familiar with all kinds of dyeing machinery. Good references. 3520, Textile World Record, Boston, Mass.

Overseer of Dyeing. 34 years of age, single. Has worked on serges, wool and worsted, thibets, cheviots, kerseys, cotton and wool raw stock, and cotton and worsted yarns. Is familiar with all makes of dyeing machinery. Good reference. Will not go West, South or Canada. 4519, Textile World Record, Boston, Mass.

Overseer of Dyeing. 48 years of age, American, married. Worked on raw stock, slubbing, yarns, piece dyes, indigo and hydrosulphate vats. Good reference. Could take a position at once. 4523, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man 37 years of age, married and American. Has worked on piece dyes, cross dyer on cotton and worsted, skein and stock. Is familiar with all kinds of dyeing machinery. Good references. 3572, Textile World Record, Boston, Mass.

Overseer of Dyeing and bleaching. Position wanted by a man, 28 years of age, single, American. Has worked on cotton warp, short and long chain, raw stock, piece goods. Has had a wide experience on awnings tickings, cotton worsted suitings, flannels, ginghams and indigo dyeing. Familiar with the Klauder & Weldon and Delehanty machines and jig dyeing machines. Good reference. 3789, Textile World Record, Boston, Mass.

Overseer of Dyeing in a woolen mill. Position wanted by a man, 37 years of age, single, American. Has worked on piece dyes, raw stock, cotton, wool and shoddy, yarns, etc. Good reference. 3812, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man 43 years of age; married; Scotch. Worked on cotton, wool and worsted dress goods, knitting yarns. Good reference from mills in Scotland where he has been employed as manager of dye and finishing works. 3456, Textile World Record.

FINISHERS.

Overseer of Finishing or sewing machine fixer. Married, 33 years of age. Worked on men's balbriggan, ladies' and gent's ribbed goods and fleece lined. Familiar with all makes of sewing machines. Good reference. 4575, Textile World Record, Boston, Mass.

Overseer of Finishing, overseer of burling and sewing or finished percher. 30 years of age, married. Worked on wool and worsted piece dyes. Familiar with all makes of finishing machinery. Good reference. 4588, Textile World Record, Boston, Mass.

Overseer of Finishing in a Hosiery Mill, or Superintendent in a small mill where superintendent would have charge of dyeing and finishing in addition to his other work. 37 years old, married; has worked on infants', misses', ladies' and men's hosiery, seamless and full fashioned, cotton, wool and mixtures. Is familiar with all kinds of finishing machinery. Good reference. 4099, Textile World Record, Boston, Mass.

Overseer of Finishing of a small mill, second hand in a large mill, or overseer of burling and sewing. 27 years of age, married. Worked on fancy cassimeres, kerseys, meltons, thibets, beavers, broad cloths, dress goods and worsteds. Familiar with the different makes of finishing machines. Will not go to Penn., West, South or Canada. Good reference. 4579, Textile World Record, Boston, Mass.

Overseer of Finishing, or second hand in a large mill. Married, 28 years of age. Worked on fancy and plain worsteds, woolens, thibets, cotton worsteds, broad cloths, dress goods and kerseys. Familiar with the different makes of machines. Will not go West, South or Penn. Good reference. 4574, Textile World Record, Boston, Mass.

Overseer Woolen Finishing. Position wanted by a man 36 years of age, married, American. Worked on kerseys, beavers, meltons, thibets and cloaking. Has worked in a number of the leading mills. Familiar with all kinds of machinery. Will not go West or South. Good references. 3939, Textile World Record.

Overseer of Woolen Finishing. Position wanted by a man 35 years of age, married, American. Has worked on all kinds of woolen goods, unions, etc. Could take position at one week's notice. Good references. 3915, Textile World Record, Boston.

Overseer of Woolen Finishing. Position wanted by a man 40 years of age, single, American. Worked on all kinds of steam faced finished goods, broad cloths, kerseys, meltons, also cassimeres, worsteds and cotton worsteds. Good reference. 3813, Textile World Record, Boston, Mass.

Overseer of Finishing in Woolen Mill. Position wanted by a man 41 years of age, married, American, finished cassimeres, fancy and cotton worsteds, beavers, meltons, dress goods, first class reference. Can take position at once. 3706, Textile World Record.

Superintendent or Overseer of Finishing. Position wanted by a man 36 years of age, married, Swede. Has worked on all kinds of underwear, ladies', gentlemen's and children's. Is familiar with all kinds of finishing machinery. Good references. 3674, Textile World Record, Boston, Mass.

Overseer of Finishing in a woolen mill. Position wanted by a man 26 years of age, single. Worked on all kinds of goods. Will not go West, South or to Canada. Good references. 3945, Textile World Record.

Overseer of Finishing. Worked on all kinds of woolen and worsted goods. Familiar with all makes of finishing machinery. Will go any place for a good position. Now employed but could leave at reasonable notice. Good reference. 3046, Textile World Record, Boston, Mass.

Overseer of Woolen Finishing. Position wanted by a married man, 50 years of age. Has had a wide experience in leading mills on all classes of woolen and worsted goods. Is an expert on broad cloths or kerseys. Good reference. Could take a position at once. 4527, Textile World Record, Boston, Mass.

Overseer Boarding and finishing hosiery. All kinds of men's, women's and children's hosiery, except silk; age 41;; American; married. Can furnish references. 3035, Textile World Record.

FINISHERS

Overseer of Woolen Finishing. Position wanted by a man 40 years of age, married. Worked on woolen goods, cotton warps, cotton mixtures and a variety of woolen goods. Familiar with all kinds of machinery used in the finishing department. Good reference. 4562, Textile World Record, Boston, Mass.

Overseer of Woolen Finishing from loom to case. 50 years of age, married. Worked on all kinds of worsted and woolen goods, particularly face finished high lustre woolens. Familiar with all kinds of finishing machinery. Will not go West, South or Canada. Good reference. 4564, Textile World Record, Boston, Mass.

Overseer of Bleaching, Starching or Finishing. 26 years of age, single. Worked on drills, twills, sateens, cords, sheetings, shirtings, ducks, towels, mulls, cambrics and muslins, in fact all kinds of cotton goods. Familiar with all kinds of machinery used in handling these goods. Good reference. 4513, Textile World Record, Boston, Mass.

Boss Finisher. Position wanted by a man 47 years of age, American, married. Has worked on worsteds, cotton worsteds, kerseys, dress goods, etc. Is familiar with all American machinery and some English, such as shears and gigs. First-class references. Would prefer a position in New Jersey or Philadelphia. 3924, Textile World Record, Boston.

Overseer of Cotton Finishing or superintendent of bleach and dye works. Position wanted by a man, 42 years of age, American, married. Has worked on lawns, lenos, shirtings, sateens, flannels, in fact all kinds of cotton goods except back filled goods. Familiar with American and English machinery. Good references. 3852, Textile World Record, Boston.

Overseer of Cotton Finishing and napping. Position wanted by a man, 34 years of age, Irish, single. Has worked on domets, sheetings, all weights and widths, flannels, blankets, double felts, duckings, drillings and shirtings. Familiar with all kinds of finishing machines used in the finishing of these goods. Good reference. 3773, Textile World Record, Boston.

Overseer of Wet Finishing and gigging. Position wanted by a man 48 years of age, American. Has been employed in one of the largest mills in the N. E. States as overseer of wet finishing and gigging. First class references. 3722, Textile World Record, Boston, Mass.

Overseer of Finishing. Position wanted by a man, 34 years of age, English, married. Worked on beavers, meltons, friezes, cassimeres, satinettes, chinchillas, cotton fancy and piece dyed worsteds. First class recommendation. 3729, Textile World Record, Boston, Mass.

Overseer of Bleaching and Finishing. Position wanted by a Scotchman, 42 years of age, married. Thoroughly experienced in bleaching and finishing cotton piece goods, linens, etc. 18 years' experience in England, Scotland and United States. First class references from mills where employed. 3489, Textile World Record, Boston.

Superintendent of bleaching and finishing cotton goods. Worked on all kinds of cheese cloth, buttercloth, sheetings, quilts, cambrics, long cloth, ducks and drills. Age 31; English; married. 3218, Textile World Record, Boston, Mass.

Overseer of Woolen Finishing. Position wanted by married man 30 years of age; worked on cheviots, dress goods, all grades of worsteds, overcoatings, suitings. 4048 Textile World Record, Boston.

Overseer of Finishing. Worked on all kinds of men's wear, fancies and piece dyed woolens and worsteds, dress goods of every description and face goods. First-class references; 36 years of age; Scotch. 3273, Textile World Record, Boston, Mass.

Overseer of Finishing and Napping of cotton goods. Position wanted by a man, 33 years of age, Canadian, married. Has worked on oxfords, ginghams, chambrays, dress goods, flannellettes, blankets, domets, etc. Is familiar with all kinds of American, German and English finishing machinery, tenter frames, calenders, stretchers, presses and nappers. Good reference. 3772, Textile World Record, Boston.

MISCELLANEOUS.

Sewing Machine Fixer. Position wanted by a man, 25 years of age, single. Familiar with Wheeler & Wilson, single and double needle, button and buttonhole machines, also Wilcox & Gibbs and Union Special. Will not go West, South or Canada. Good reference. 4573, Textile World Record, Boston, Mass.

Overseer of Beaming, quilling or warp gassing. Position wanted by a man 44 years of age, married, English. Familiar with fancy cotton and silk beaming. Understands all makes of machinery used in the department. Good reference. 4560, Textile World Record, Boston, Mass.

Overseer of Ring Spinning, spooling, warping and twisting. Position wanted by a married man 28 years of age. Worked on suitings, checks, plaids, tickings, awnings, stripes and denims. Familiar with Whitin, Mason, Lowell, Fales & Jenks spinning frames, Draper spoolers and warpers, new Whitin spoolers and Fales & Jenks and Whitin twisters. Will not go to Penn. or Canada. Good reference. 4563, Textile World Record, Boston, Mass.

Competent Cost Accountant. Position wanted by a young man at present with firm of business economists. Desires an executive connection with large manufacturing concern who are in need of a thoroughly wide awake man with executive ability and wide experience in textile and other lines and one who will guarantee to lower the cost of production in a large measure. Good reference. 4558, Textile World Record, Boston, Mass.

Chief Engineer, master mechanic or superintendent. Married man, 31 years of age. Familiar with machinery of all kinds and purposes, mostly for power. Hydraulic, electrical, direct, alternating current, high speed, engine, condensing, high pressure and elevators. Prefers New England. Good reference. 4561, Textile World Record, Boston, Mass.

Overseer of Slashing, spooling, warping, drawing and long chain beaming. 42 years of age, widower. Worked on white and colored. Work from 8s to 100s cotton. Familiar with all kinds of machines. Good reference. Will go any place for a good position. 4572, Textile World Record, Boston, Mass.

Comber Setter or Second Hand of combing in a cotton mill. Position wanted by a man 24 years of age, single, American. Worked on fine and coarse cotton. Familiar with Whitin, Asa Lee, and Hetherington machines. Will not go to New Jersey, West, or Canada. Good references. 4018 Textile World Record.

Master Mechanic. Position wanted by a man, 43 years of age, married. Has worked in colored cotton mills mostly and familiar with all kinds of cotton machinery. Good reference. 3935, Textile World Record.

Overseer of Combing. Position wanted by a man 27 years of age, married, English. Has worked on men's wear and fancy dress goods. Is familiar with Noble combs of all makes, Crompton, Taylor, Wadsworth, Smith and Prince. Good references. 3617, Textile World Record, Boston, Mass.

Asst. Supt, or Overseer of Dressing. Position wanted by a man 30 years of age, married and American. Has worked on fancy cotton, woolens and worsteds, and all kinds of high and low grade goods. Is familiar with all kinds of woolen and cotton machinery. Good references. 3537, Textile World Record.

Overseer of Seaming. Position wanted by a man 27 years of age, married. Has worked on ladies' cotton hose and all grades of cotton underwear. Is familiar with Wilcox & Gibbs, Hepworth, Campbell & Clute stitching, welting, looping, etc., machines. Good references. 3683, Textile World Record, Boston, Mass.

Overseer of Burling and sewing, or second hand in the finishing room. Position wanted by a man 29 years of age, American, single. Has worked on fine worsteds, mercerized goods, cotton worsted, kerseys, thibets, cassimeres and satinets. Familiar with the Parks & Woolson, Curtis & Marble shears, David Gessner nappers and James Hunter machines. Will not go West, South or Canada. Accept a position one week's notice. Good references. 3896, Textile World Record, Boston.

MISCELLANEOUS.

Master Mechanic, engineer or machinist. Married man 36 years of age. Has worked on cotton and woolen machinery and familiar with various makes of machinery. Has had a wide experience as machinist and engineer with good reference. 4565, Textile World Record, Boston, Mass.

Overseer of Spooling, twisting, winding and reeling in a cotton mill. 36 years of age. Worked on hosiery warp and thread, Sea Island, Egyptian, Peeler and Peruvian and waste yarns. Familiar with the Lowell, Draper, Whitin, Dobson & Barlow, Fales & Jenks and Universal winders. Will not go West or Canada. Good reference. 4580, Textile World Record, Boston, Mass.

Overseer of Spooling, twisting and skein winding. Position wanted by a man 23 years of age, single. Worked on woolens, worsteds and cotton worsteds. Familiar with the Worcester Warp Compressing Company's spoolers, Davis & Furber and Johnson & Bassett machines. Would prefer a position in Mass., R. I., or Conn. Good reference. 4569, Textile World Record, Boston, Mass.

Second Hand in woolen finishing room, wet or dry, or both. Position wanted by a single man 27 years of age. Worked on fancy woolens, kerseys, thibets, meltons and broad cloths. Good reference. Will not go to Vermont. 4566, Textile World Record, Boston, Mass.

Master Mechanic. 37 years of age, single. Has had experience in cotton mills, bleach and dye works. Understands all kinds of machinery used in the above mills. Understands all kinds of engines and electrical plants. Good reference. 4093, Textile World Record, Boston, Mass.

Overseer of Beetling Department. Position wanted by a man, 43 years of age, married, Irish. Has had ten years' experience on cotton goods in this country, twelve years' experience on linen goods in Ireland. Has worked on cotton goods of all counts from 67 by 72 to 96 by 32, also handled all kinds of beetling machines. Will not go South or Canada. Good reference. 3807, Textile World Record, Boston, Mass.

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Fits for the best positions in all branches of the textile industry both commercial and manufacturing.

Complete courses in Cotton Manufacture, Woolen and Worsted Manufacture, Designing, Chemistry and Dyeing and Textile Engineering. All courses include thorough training in Mechanics, Advanced Mathematics, Mechanical Drawing, Chemistry, Decorative Art, Weaving, etc.

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The comparison tells a story all its own.

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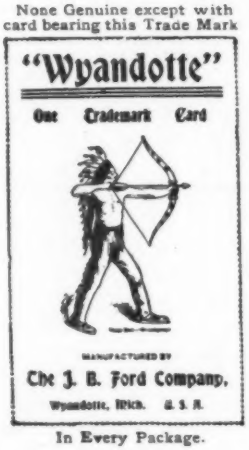

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does the work for which you are now employing the harsher alkalies. It has all the detergent properties of those compounds, but none of their harmful effects. If you are not using Wyandotte Textile Soda, *order* a quantity *from your supply house* and write us to send a practical man to get you started.

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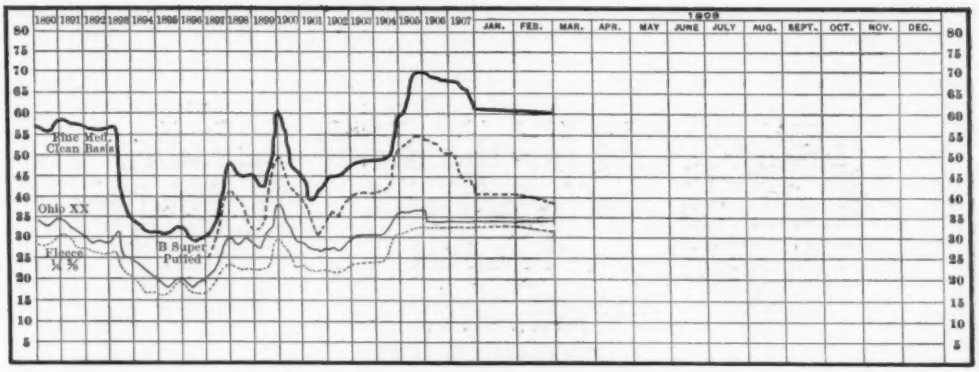


CHART SHOWING RANGES IN THE PRICE OF WOOL TO DATE.

The Wool Market.

The prevailing influences tend toward lower prices and restricted business. With a large proportion of the woolen and worsted spinning machinery idle, the consumption of wool has been greatly reduced, manufacturers are not buying and are extremely bearish. Many of the dealers are also talking low prices, especially those who have sold out their old wool and want to replenish their stocks by buying the new clip from the growers at low prices. In addition to these conditions there is a feeling of doubt regarding the future course of business, which persists in spite of the apparent restoration of confidence in financial circles. The presidential campaign and talk of tariff revision make experienced manufacturers cautious about carrying stocks of raw material or goods. While close observers scout the idea of any sudden or material break in the wool market, they believe there will be a hand to mouth business carried on for some time to come.

California, Los Angeles. The Whittenberg Co., 407 Los Angeles St. would like to correspond with manufacturers of hosiery, underwear, gloves towels, etc. with a view to representing them in that section.

Alabama, Birmingham. The National Hosiery & Yarn Co. has been incorporated with capital stock of $20,000. Hosiery, yarns, etc. will be manufactured. C. Exum, L. R. Emerson, J. H. McPhail, J. H. Thomas and P. C. Withers are the incorporators.

*Alabama, Gadsden. Otto Agricola, who was reported as promoting the organization of a cotton mill, advises us that nothing is being done in that line.

Arkansas, Monticello. The engine of the Monticello Cotton Mill was wrecked by the blowing out of a cylinder head which necessitated the shutting down of the plant.

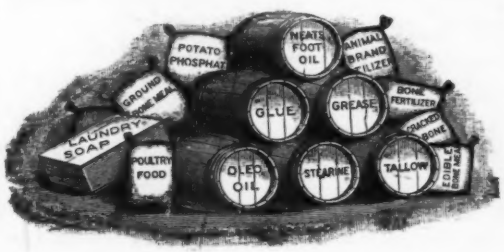
Canada, Montreal. 1,200 employes of the Dominion Textile Co., Ltd., are on strike as a result of trouble over working hours.

Connecticut, Bridgeport. The Salts Textile Mfg. Co. have returned to a full time schedule.

Connecticut, Danielson. The departments of the Quinebaug Company which were on short time schedule, have resumed running on full time.

*Connecticut, Putnam. The insurance carried by the Pine Tree Worsted Co., amounting to $48,000, will be paid in full. Nothing definite can be stated regarding the rebuilding of the plant.

*Connecticut, Turnersville. Smith & Kauffmann have not taken over the plant of T. W. Turner & Co. It is understood that they are trying a loom on sample goods at present.



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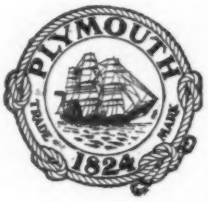

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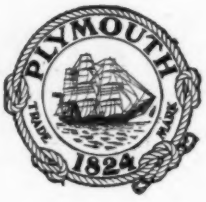

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Plymouth Rope Drives by their absence of slip, steadiness, freedom from electrical disturbances, great durability and low cost make the ideal drive for textile mills.

Put your transmission problems up to us. Our long experience in manufacturing, installing and using rope drives is at your service.

Send for our booklet on "Rope Driving."

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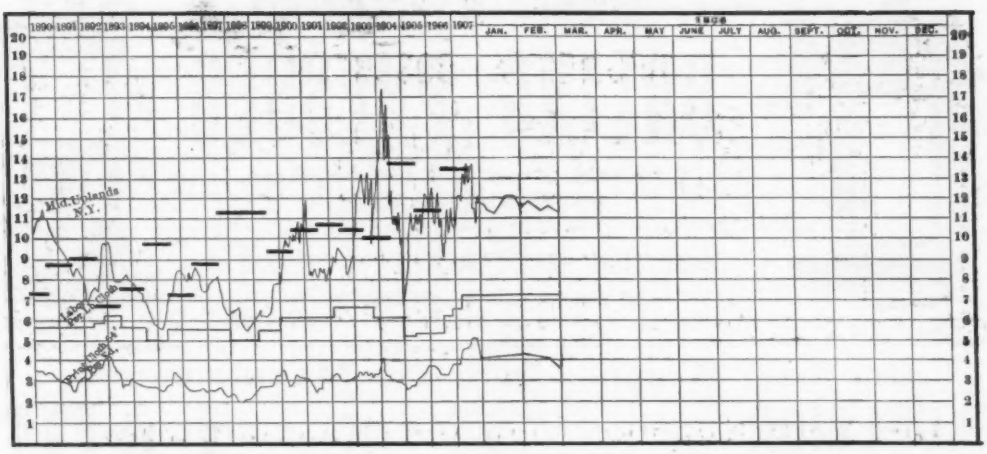

The short, heavy, horizontal lines indicate the size of the cotton crops in millions of bales.

CHART SHOWING RANGE IN THE PRICE OF COTTON TO DATE.

The Cotton Market.

Prices have sagged under the influence of the continued depression in the goods market. The consumption of cotton is going on at a greatly reduced rate and the situation in the cloth market does not warrant hopes of an early resumption at the rate prevailing a year ago. Foreign mills are also beginning to slack up, although not to the same extent as on this side of the Atlantic. The receipts of cotton continue small, and this is what has in all probability prevented prices from falling to a much lower level. Following are the figures of the movement into sight from Sept. 1 to Feb. 28, as estimated by the Chronicle:

1907-08,	Feb. 28	9,087,278 bales
1906-07,	Mar. 1	10,895,472 bales
1905-06,	Mar. 2	8,613,263 bales
1904-05,	Mar. 3	9,485,395 bales
1903-04,	Mar. 4	8,694,603 bales
1902-03,	Mar. 5	8,919,693 bales

The world's visible stock is estimated by the same authority on Feb. 28 as follows:

	1908	1907	1906	1905
American,	3,556,945	4,254,510	3,605,160	3,186,271
All other,	1,193,000	1,267,000	1,541,000	1,038,000
	4,749,945	5,521,510	5,146,160	4,224,271

Connecticut, Wauregan. The Wauregan Company has gone back on full time after running 40 hours a week during February.

Illinois, Chicago. E. Eiger & Bros., manufacturers of hats, will erect an eight story building at the corner of Jackson Blvd. and Aberdeen St. for their own occupancy.

*Illinois, Decatur. The Hinman Knitting Co. will do only a jobbing business at the present. Later on a knitting plant may be started, but there is no immediate prospect of this. We reported the incorporation of this company with capital stock of $20,000 last week.

*Iowa, Cresco. The project to establish a knitting mill which was headed by F. A. Huber, has been abandoned for the present.

Maine, Augusta. The Edwards Mfg. Co. will run the plant half time for the next few weeks.

*Massachusetts, East Blackstone. A report is in circulation to the effect that Wm. F. Worral of Woonsocket and David S. Sherwood of Providence, whom we recently reported as purchasing the Quick River Mill property, are about to erect a yarn mill at a cost of from $10,000 to $20,000.

Massachusetts, Lawrence. At a meeting of the directors of the Wood Worsted Mills, B. Frank Smith, of Andover, was elected a director of the corporation and Charles J. Bodfish was elected treasurer to fill the vacancies caused by the death of the late Benj. F. Smith, Jr. Both Mr. Smith and Mr. Bodfish are connected with the American Woolen Co.

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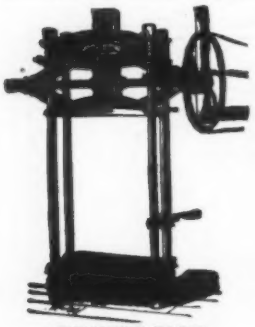

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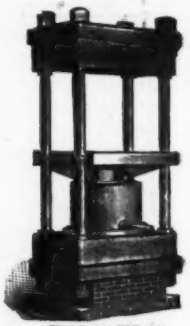

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EXCELSIOR WOOL OIL COMPOUND AND COTTON SOFTENER

Established 1841

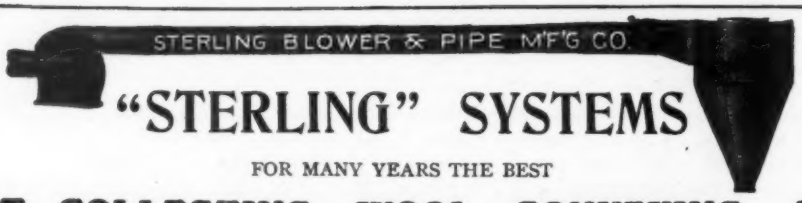
Burckhardt & Co.

Cincinnati, O.

The Excelsior Compounds are the best lubricating and softening products for wool, cotton, wool and cotton mixed. Eliminates the scouring process and effects large saving in time and soap. They will not gum in the cards.
Write for prices and particulars.

OLIVE OIL TALLOW SOAP

LARD OIL



"STERLING" SYSTEMS

FOR MANY YEARS THE BEST

DUST COLLECTING, WOOL CONVEYING, ETC.

STERLING BLOWER & PIPE MFG. CO.

Write for "1907" Catalog.

HARTFORD, CONN., 1027 Huyshope Ave. New York Office, 109 Liberty St.

For 25 YEARS We have held OUR REPUTATION as Progressive Manufacturers. Do not forget this when ordering GAGES.

ORIGINAL SINGLE BELL CHIME WHISTLE

Harmonious
Far Reaching
Pleasing.

A Truthful Gage is the only GOOD GAGE.

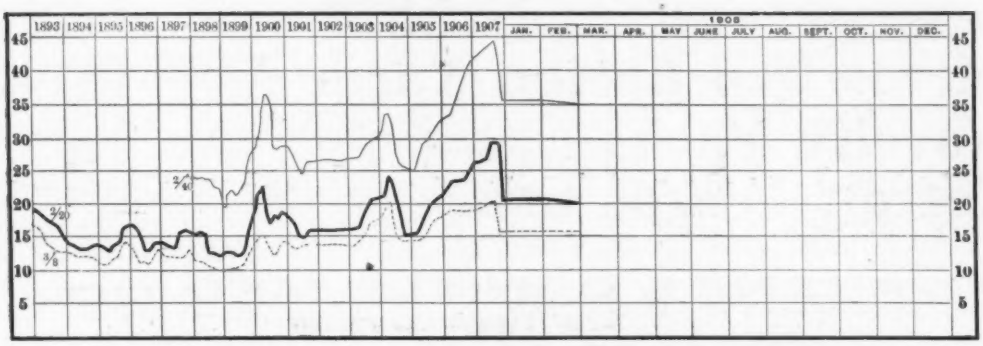
This Company manufactures, besides the above a large variety of articles used in connection with steam engines and boilers, all of which are standard quality, and may be relied upon. *Send for Catalogue.*

CROSBY STEAM GAGE & VALVE CO.

Stores: BOSTON, NEW YORK, CHICAGO, LONDON.

Office and Works: BOSTON, MASS.

Yarn Department.



GRAPHIC CHART SHOWING RANGE IN THE PRICE OF COTTON YARN TO DATE.

The Cotton Yarn Market.

The market has been particularly dull on weaving yarn the past few weeks and prices have reached new low levels. In fact, prices on two-ply skeins and warps have reached a basis that shows a positive loss to spinners, of from one to three cents per pound. This can be accounted for only by the fact that there is still an accumulation of stock which is being unloaded.

The market on knitting yarns has been on a better basis with a better demand. The demand for prompt delivery on knitting yarn has been very good, but new contracts for delivery ahead, have not been placed freely. Some of our customers on knitting yarn advise us they are getting new orders in a small way, and prompt delivery is usually specified on any new order coming in; apparently indicating stocks are getting low in the hands of jobbers.

Prices today are as follows:

Eastern Cops.

6s	18½
8s	19
10s	19½
14s	20
16s	21¼
18s	21½
20s	22½
22s	20
24s	24
26s	26
30s	26
34s	27¼
36s	30¼
40s	32

On cones, ¾c. more up to 14s; 1c. more from 15s to 22s; 1½c. from 23s to 35s, and 2c. above that.

Eastern Two-Ply Skeins, Carded Peeler.

12s	20
14s	21
18s	22
20s	23
24s	24½
26s	25
30s	25½
36s	30½
40s	37
45s	41
50s	45
55s	50
60s	55

Eastern Two-Ply Warps, Carded Peeler.

2/30s	25
2/36s	30
2/40s	37
2/45s	41
2/50s	47
2/60s	56

Egyptian Weaving Yarns.
Single Skeins Combed.

30s	44
36s	45
40s	47
45s	50
50s	53
55s	56
60s	63
70s	68

Massachusetts, Chicopee. The Dwight Mfg. Co. and the Chicopee Mfg. Co. have reduced working hours to short time schedule. This is the first curtailment in both of these plants.

*North Carolina, Concord. At a meeting of the creditors of the Odell Mfg. Co. on Feb. 25, Caesar Cone, under whose management the mills have been operated, read his report, showing that $63,000 has been cleared for the creditors. A resolution was offered to appoint a committee of five to plan a reorganization of the company.

THE J. R. MONTGOMERY CO.,

Windsor Locks, Conn.

MANUFACTURERS OF

Mercerized Cotton Yarns Gives the High Silk-Like Lustre in Knit Goods and Woven Fabrics.

Novelty Yarns Boucle, Bourette and Spirals, in Cotton, Wool, Worsted, Mohair and Silk.

Cotton Warps on Beams, Jack Spools and Tubes. In Fancy, Twist, Colors and Printed.

GREENE & DANIELS MFG. CO.,

COMBED, CARDED AND GASSED

Yarns, Threads, Twines and Chain Warps.

DYE SULPHUR BLACKS DIRECT IN COPS, CONES OR TUBES.

Colored and Bleached Yarns Furnished in any manner desired by the trade.

Pawtucket, R. I.

MONUMENT MILLS,

Manufacturers of

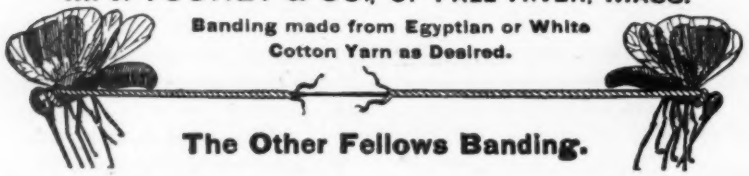
White, Colored, Fancy and Double Twist

COTTON WARPS

HOUSATONIC, MASS. **4s to 60s.**

M. J. TOOHEY & CO., OF FALL RIVER, MASS.

Banding made from Egyptian or White Cotton Yarn as Desired.



The Other Fellows Banding.

The Merwin Paper Company

Hartford, Conn.

Press Papers and Fender Boards

Correspondence Solicited

Mills at Rainbow, Conn. Address Inquiries to Rainbow, Conn.

The Philadelphia Market.

Southern frame spun cones:—

7s and coarser	18
8s and 9s	18-18¼
10s	18½-19
12s	19-19½
14s	19½-20
16s	20½
18s	20½
20s	21
22s	21½
24s	22
26s	22½
30s	23
40s	32
50s	42

Southern high grade mule yarn:—

Cones.

10s	21
12s	21½
14s	22
16s	22½
18s	23
20s and 22s	23½
24s	24½

Southern frame yarn, lower grades:—

6s and 8s	18
10s	18

Eastern cones (high grade quality):—

10s	22
12s	22½
14s	23
16s	23¾
18s	24¼
20s and 22s	24¾-25

Skein yarn (mostly Southern):—

4s and 8s soft	17
10s and 12s	17½-18
14s to 20s	18-19
22s	19½
14/2	18
16/2	18½
20/2	19½
30/2	22
40/2	29
16/3 slack	18½
12/3 slack	18
8/3 carpet	17
8/3 slack	17
9/4 slack	17

Warps (Southern):—

10s to 12s	18
14s	18
16s	18½
20s to 22s	18½-19½
26s	20
14/2	18½
16/2	19
20/2	20
24/2	21
30/2	22
40/2	30

JAMES E. MITCHELL CO., COMMISSION MERCHANTS.
Cotton Yarns
AND COTTON CLOTHS.
122-124 Chestnut Street, PHILADELPHIA, PA.
73 Leonard Street, NEW YORK.
Brown Building, 185 Summer Street, BOSTON, MASS.
25 South Tryon Street, CHARLOTTE, N. C.

CATLIN & CO.,
Cotton Yarns.
345 Broadway, NEW YORK.
67 Chauncy Street, BOSTON.
128-130 Chestnut Street, PHILADELPHIA.
605 Medinah Temple, CHICAGO.

Harding, Whitman & Co.,
Dry Goods Commission Merchants,
COTTON AND WORSTED YARNS.
BOSTON. NEW YORK. PHILA.
CHICAGO. BALTIMORE. ST. LOUIS.

A. D. Salkeld & Bro.
COMMISSION MERCHANTS
DEP'T. FRED'K VIETOR & ACHELIS
COTTON YARNS
66-72 LEONARD STREET - - NEW YORK

Fred Sternberg & Co.
530 Broadway, - NEW YORK.
MERCERIZED TURKEY RED GASSED } COTTON YARNS.

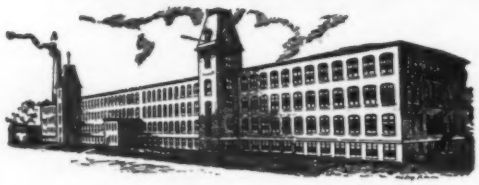
LUDWIG LITTAUER,
SUCCESSOR TO
MOELLER & LITTAUER, 109 Greene St., New York
SILK, WORSTED, WOOLEN YARNS COTTON AND MOHAIR
Polished Threads and Tinsel. Artificial or Wood Silk.
Mercerized, Turkey Red, Fine Gassed Yarns.
SILK MILL, BOONVILLE, N. Y.

High Grade Hosiery Yarn
White and Colors. All Numbers. Sewing Twines on Cones and Tubes
SPECIALTIES IN WEAVING YARN
Black and White. Double and Twist for Woolen Trade.
CANNON MILLS 53-5 Worth Street, New York
Philadelphia Office, 205-7 Chestnut St.

C. MOORE & CO.,
Manufacturers of
TWINES, THREADS AND YARNS
Jacquard Harness Twines of all kinds
on hand and made to order.
S. W. Cor. Fifth and Market Sts., Phila.

S. T. Crocker, Pres. W. F. Stiles, Treas.

ORSWELL MILLS



Fitchburg, Mass.

Capacity, 45,000 Spindles.

HIGH GRADE YARNS

From Egyptian and Peeler Cottons, Carded or Combed, in Chains and Skeins, on Balls, Beams, Spools, Cops, Cones, Tubes, Single or Twisted.

Cotton Yarns

Jenckes Spinning Company
Pawtucket, R. I.

Carded and Combed single and twisted Yarns and Threads from Peeler, Sea Island and Egyptian Cottons, on Cops, Cones and Tubes or in Skeins and Warps. Six Cord Thread Yarns a Specialty **Bleached or in colors**

GRANT YARN CO.,

COMBED AND CARDED COTTON.

YARNS 40's and above. AND

FITCHBURG, MASS. **WARPS**

Mercerized and Plain
Skein, Warps, Cones, Cops, Tubes

COTTON YARNS

426 and 428 Market St., Phila.

Theo. H. Strouse & Co.

Ballou Yarn Co.
PROVIDENCE, R. I.

Harness and Seine Twines and other Job Gassing, Winding, etc. All Numbers

GASSED YARN SPECIALTIES

C. M. BLAISDELL, Pres. and Treas. G. A. BLAISDELL, Vice-Pres. and Sec'y.
Established 1860—Incorporated 1893.

THE S. BLAISDELL, JR., CO.,

COTTON, EGYPTIAN PERUVIAN

American Long Staple a Specialty. Shipments direct to mill from Egypt, Perú and all American Southern Points.

CHICOPEE, MASS.

Cotton Waste Purchased on Yearly Contract from Mills.

F. W. MAURER & SONS CO.

MANUFACTURERS OF

TAPES, BINDINGS, NARROW FABRICS AND EDGINGS FOR NOVELTY CURTAINS

Office, 528 Cherry St. Factories, 529 & 531 Arch St. and 524 Cherry St., and Germantown Ave. & Bristol St.
PHILADELPHIA

Hoffman, DeWitt & McDonough Co, Inc.

Manufacturers of

Diamond Stay Bindings TRADE MARK

Tapes, Webbing and Bindings.

COTTMAN and G STS., PHILADELPHIA
CHELTENHAM, PENNA.
Bell Telephone, 235-D Cheltenham

ESTABLISHED 1880.

New York Silk Conditioning Works

138-140-142 Spring Street, New York.

Testing of

Silk, Wool and all Textile Fabrics

Mixed colored yarns (mock twist, half colors):—

6s to 10s	20-21
12s to 14s	21½-23
16s to 18s	24-25

Mock Egyptian, 2c. advance over white.

Egyptian, 7 to 8c. above best quality white.

Massachusetts, New Bedford. 80 twisting machines in the Nonquit Spinning Co. were idle several days this week as the result of the breaking of a main line of shafting on the ground floor.

Massachusetts, Salem. The Naumkeag Steam Cotton Co. will reduce production 20 per cent. by operating the plant 5 days a week, 10 hours a day, for the present.

*New Jersey, Paterson. Abraham Brokman has purchased the interest of Peter Collins in the silk business located at 109-111 Spruce St., lately run as Brokman & Collins. Mr. Brokman was formerly in the silk business in the same mill building, selling his plant to the Pansy Silk Co.

North Carolina, Cameron. Charles C. Jones is reported as contemplating the starting of a small knitting mill to be equipped with 15 to 20 machines, and would like to correspond with manufacturers of machinery for knitting mills.

*North Carolina, Washington. The proposed new cotton mill for this place cannot be regarded with any certainty. The Washington Investment Company offers a desirable site of five acres which, combined with other facilities, makes the establishment of a cotton mill a likely proposition. However, desirable parties have not been interested as yet.

Ohio, Dresden. All the property, including real estate, machinery and equipment and raw material of the Kapner Brothers & Duga Hosiery Co., at Dresden, Ohio, is to be offered for sale at auction on March 18 on the premises. Besides the plant there is about 350,000 pounds of raw material. Private bids for the property are to be considered until March 14. C. T. Marshall of Zanesville, Ohio, and Frederick C. McLaughlin, 32 Liberty St., New York, are the trustees.

*Ohio, Piqua. The Stuart-Brown Underwear Co. is running in full as the recent fire was confined to the boiler room which is used as a heating plant. The reported losses were greatly exaggerated.

Pennsylvania, Philadelphia. The Philadelphia Winding Co., with George S. Lings, John Fowler and Louis Marks as incorporators, is applying for a charter. The plant is located in the Lomax Mills, at Jasper and Orleans Sts., and is operated on the winding of yarns. John Fowler is manager.

Pennsylvania, Philadelphia. The Landenberger Manufacturing Co., Howard and Columbia Ave., manufacturers of high grade dress goods on 80 broad looms, are running their plant to its fullest capacity until 9 o'clock at night. This is one of the few mills in this vicinity which has been running full time all through the late depression.

LINEN YARN IMPORTER.
HUGHES FAWCETT, 115 Franklin Street, NEW YORK.
Flax, Hemp and Jute Line and Tow Yarns, For Weaving Purposes.
Linen Jacquard Harness Twines, Fine Cotton Harness and Heddle Twines For Cotton, Silk, Woolen and Carpet Manufacturers.
Correspondence solicited. Samples promptly furnished.

DUNCAN & YOUNGS
95 Worth Street, NEW YORK
Practical Manufacturers of
YARNS, THREADS, TWINES, CORDS, ROPE
AND MILL SUPPLIES
Anything in the line you cannot get anywhere else apply to us.

FRANK A. TIERNEY,
TOPS, NOILS, ROVINGS, YARNS.
Wool, Silk, Mohair, Camels Hair, Ramie.
Garnetted Stocks
Silk also Ramie Tops and Noils, Ramie, Silk, and Silk Noil Yarns,
Special Textile Fibres and Novelties.
Wool Exchange Bldg., 260 West Broadway, New York.

THE RUSSIA FLAX CO.
Importers of Flax
FOR ALL PURPOSES.
Correspondence solicited.
477 Broadway, - Brooklyn, N. Y.

Reels for Cotton WOOLEN AND WORSTED
Patented Hosiery Winders, Cop Winders and Spoolers.
LINDSAY, HYDE & CO.,
2124 to 2130 East York St., PHILADELPHIA, PA.

Lowell Crayons Meet the requirements of any cotton, woolen or worsted mill.
May we send samples? 15 colors and white.
Lowell Crayon Co., Original Manufacturers Lowell, Mass.
Trade Mark on every box.

Simplex Yarn Tables.

Showing equivalent sizes of different systems of numbering yarn; cotton, woolen, worsted, etc., so that the sizes of different standards may be quickly compared. Also contains a number of other valuable yarn tables for designers, manufacturers and knitters. PRICE 50c Textile World Record, Boston.

Pocasset Worsted Company

WORSTED YARNS

100 Boylston Street, - Boston, Mass.

French System. **B. F. BOYER CO.,** Bradford System.

MANUFACTURERS OF

WORSTED AND WOOLEN YARNS,

Office and Mill, River Ave. and Marlton St. CAMDEN, N. J.

THE MALCOLM MILLS CO.,

MANUFACTURERS OF

FANCY YARNS and POLISHED THREADS.

Offices: 229 Chestnut St., Philadelphia.

Mills: Frankford, Pa.

KROUT & FITE MANUFACTURING CO.,

Manufacturers of

Silk, Cotton and Mercerized Narrow Fabrics

SPOOL TAPES A SPECIALTY.

Telephone Connection. Office and Mill, Allegheny Ave. and Emerald St., PHILADELPHIA.

WORSTED YARNS

RICHARD CAMPION.

SELLING AGENT FOR

Bristol Worsted Mills,
Highland Worsted Mills.
The French Worsted Co.

300 Chestnut Street,
PHILADELPHIA, PA.

EDDY & STREET,

Cotton, Woolen

Yarns and Braids

Worsted, Spun Silk.

PROVIDENCE, R. I.

Woolen and Merino YARNS

Eaton Rapids Woolen Mills,

EATON RAPIDS, MICH.

Bradford System French System

STEPHENSON & CO.

Worsted and Woolen Yarns

240 Chestnut Street
PHILADELPHIA.

Worsted AND Woolen Yarns

WALTER McCOOK

BELL TELEPHONE LOMBARD 3790

576 Bourse
Philadelphia

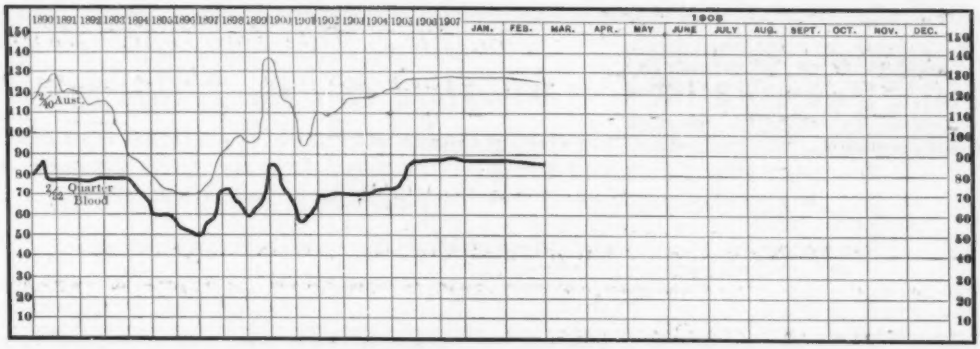


CHART SHOWING RANGES OF PRICE OF WORSTED YARNS.

Woolen and Worsted Yarn Market.

The worsted yarn market has not improved over previous reports, the demand being chiefly from manufacturers of dress goods who have enough business on hand to enable them to run their mills almost to their full capacity. In some instances these manufacturers have been compelled to contract with other manufacturers for the running of their looms on commission work. This, however, applies to mills that are working on novelties which have taken well on the market and for which many orders have been received. The orders received from this quarter, form only a small proportion of the amount of worsted yarn used, and while the demand is active it seems to add no stimulus to the buying of other numbers. The coarser numbers are hard to sell. While there is little change in the quotations there are some spinners who have reduced their prices to secure orders and keep their mills in operation.

On men's wear the market is in about the same condition as it had been all through the season; sample cuts and sample piece orders are very much in evidence while here and there some large Western operators have placed orders for quantities. Many large houses, whose reputation for placing large orders has been established, are, from all appearances, endeavoring to do business on sample cuts. The revision of orders has not been as extensive as usual. There are, however, a few concerns that are cancelling sample cuts. One buyer ordered two one and one-quarter yard cuts to be delivered March 15th, but when the goods were delivered to them, three weeks before the date mentioned, they requested the mill to take the goods back and re-ship them again as per date set on order. From the present outlook the trade will do very little until they know what the retail clothier will do for next spring, which will not be for some weeks to come. There are many predictions that when the business does come there will be a great rush to get deliveries. Prices have been quite as low as they can stand and when the duplicate business comes along much of it is likely to be placed at an advance. For the present it can be safely said that the market is moving rapidly to the quiet spell before the duplicating season.

The staple prices in rain cloths are not doing as well as many concerns have carried stock over. There are, however, novelties and fancy pattern effects in tans, browns, olive browns, drabs and modes which are selling to some extent. What the future will bring forth, in all these lines, is problematical, but the fact remains that the people are going to wear clothes and there can be nothing but improvement in the future. How great this will be, however, will depend upon the purchasing power of the general public exclusively.

Manufacturers of sweaters, fancy knit goods, etc., while they are doing a good business are holding back as much as possible, the impression being that the prices of yarns will go down further than they have within the past few months. They are buying only on a hand to mouth basis, although it is said that there is a good business in some sections of the country. Orders for yarns from the extreme West are fairly large considering present conditions. Manufacturers in that locality report being quite busy. In the Middle West business is not as good, being rather quiet for this time of the year. Manufacturers have not received orders for goods as freely as might be expected, but are using up stock in anticipation of a good demand later on. Business among the knitters of the East is rather slow but indications point to a good line of trade from that section later on. The Jersey and bathing suit manufacturers seem to be very busy and continue to place some good orders for yarns. We quote as follows:

NON-FLUID OILS

Have you seen our special folder,

Non-Fluid Oils for Textile Mills
What grades to buy: Where to use them

It will certainly pay you to send for a copy of this little publication, for it contains valuable hints on textile machinery lubrication which are certain to interest every mill owner, manager and superintendent.

Write also for a free test sample of **noN-Fluid Oil,** stating exactly where you are having trouble, and where you will test our lubricant.

ORIGINATORS AND SOLE PRODUCERS OF NON-FLUID OILS.

New York & New Jersey Lubricant Co., Dept. H, 14-16 Church St., New York City

WILLIAM B. CHARLES,
Cotton Yarns,
Cotton Cloth,
Silesia, Sateens,
For the Underwear Trade.
AMSTERDAM, N. Y.
Boston Office, 200 Summer St.

EDWIN F. SCHOFIELD,
ALL GRADES
PULLED AND FLEECE WOOLS
FOREIGN NOILS, CARPET WOOLS.
COTTON WASTE.
Mariner and Merchant Building,
3d and Chestnut Streets, Philadelphia, Pa.

JOSEPH M. ADAMS CO.
WOOLEN YARNS,
Carpet Backing and Rug Yarns a Specialty.
ARCOLA MILLS,
Main St., foot of Centre St., Manayunk, Philadelphia.

Knitting and Weaving YARNS.

Cones, Cops, Warps, Skeins,
Single, Double, Three-Ply, etc.
Peeler, Egyptian, Mixed Colors.
Large Assortment.

EDWARD S. HYDE,
226 CHESTNUT STREET,
Philadelphia, Pa.

2/12 to 2/16 low common	65-67½
2/26 to 2/28 common	75
2/12 to 2/20 1/4 blood	80
2/26 to 2/28 1/4 blood	82½-85
2/32 1/4 blood	85-87½
2/20 3/8 blood	85-87½
2/26 3/8 blood	87½-90
2/30 3/8 blood	90-92½
2/36 3/8 blood	92½-95
2/40 1/2 blood	1.05-1.07½
2/40 delaine	1.17½-1.20
2/50 delaine	1.25-1.30
2/40 Australian	1.27½-1.30
2/50 Australian	1.35
2/60 Australian	1.47½
2/24 lustre	85
2/28 lustre	87
2/30 and 3/32 lustre	90-92½
2/36 lustre	97½-1.00
1/24 worsted and 80s single cotton for raincloths	1.00-1.05
1/24 worsted and 120 single cotton for raincloths	1.15-1.20

FRENCH SPUN YARN.

1/20 1/4 blood	82½-85
1/20 high 1/4	92½-95
1/20 3/8 blood	1.00-1.02½
1/20 1/2 blood	1.05-1.07½
1/20 high 3/8	1.02½-1.05
1/30 high 1/4 blood	95-97½
1/30 3/8 blood	1.02½-1.05
1/30 1/2 blood	1.06-1.07
1/40 1/2 blood	1.09-1.10
2/50 1/2 blood	1.27½-1.30
1/50 delaine	1.22½-1.25
1/40 Australian	1.25-1.30
1/50 Australian	1.30-1.35
1/60 Australian	1.40-1.45
1/70 Australian	1.45-1.50

*Pennsylvania, Towanda. All the property of of the Towanda Knitting Company will be sold March 6 on the premises by M. M. Spalding, trustee. In addition to the building, there are 16 latch needle and 14 spring needle knitting machines which have been operated on ladies' seamless lace and ribbed top cotton hosiery. There is also a quantity of stock and supplies.

CHENEY BROTHERS

Silk Manufacturers. So. Manchester, Conn.

Trams, Organzine and Spun Silks in the hank, or on spools and cones for woolen manufacturers.

Silks for electrical uses, insulation and special purposes made to order.

Knitting Silks, Ribbons and Piece Goods for Trimming Knit Goods.

Dress Silks, Satins, Linings, Printed Pongees, Foulards and Decorative Silks; Upholstery Goods, Ribbons, Sashes, Plushes and Velvets.

WILLIAM RYLE & CO.,

Foreign and Domestic

Spun Silk Yarns and Noils.

Domestic Thrown Silk of every description. Fine Pure Dye Silks for the woolen trade a specialty. Importers of European and Asiatic Raw Silk.

54 Howard St., cor. Mercer St., NEW YORK.

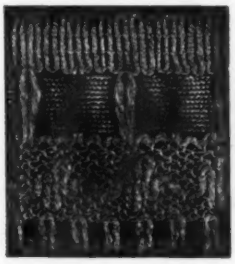
SAUQUOIT SILK MFG. CO.,

INSULATING AND BRAIDING SILKS.

ORGANZINE, TRAM & HOSIERY SILKS.

Fast Dye Organzines for Woolen Manufacturers a Specialty.

Mills: Bethlehem, Pa., Phila., Pa., Scranton, Pa. New York Representatives, Wm. Ryle & Co., 54 Howard St.—Phila. Office, 4015 Clarissa St., Nicetown.—Chicago Office, 188-190 Market St.—Boston Office, 78 Chauncy St.



GEORGE W. CHAPIN,

BRAIDS Cotton, Worsted, Mercerized, Cotton and Silk Twilled. **TAPES** Common, Twilled, Superfine and Plain 13 to 35s white and colors on spools.

YARNS Cops, Skeins, Warps, Tubes and Cones. **THREADS** on Spools, Tubes, Cones, Unbleached Bleached and Colors for Manufacturers' use.

CROCHET LACE EDGINGS Latest Styles in Pant Laces.

229 Church Street 231 . . PHILADELPHIA

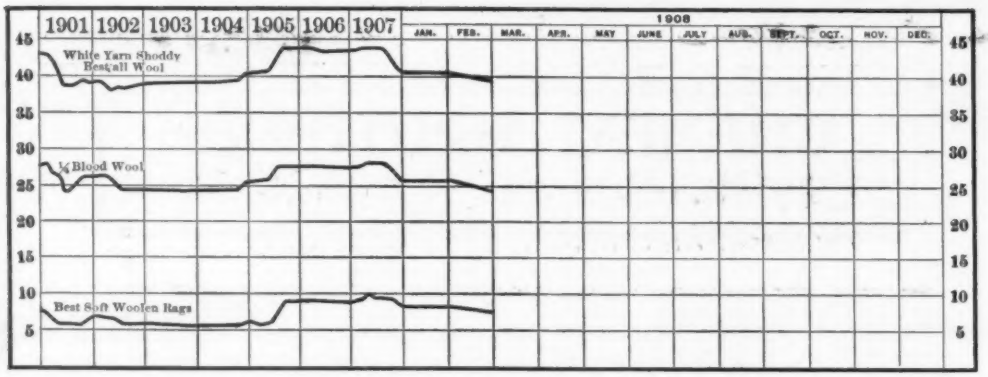


CHART SHOWING RANGE OF PRICES OF SHODDY, RAGS AND NOIL.

The Rag and Shoddy Market.

This market has shown no signs of recovery from the depression that has prevailed for so long a time. Fashion and general business conditions are now combined to depress prices and restrict sales. Spinners have a large part of the spindles idle and are keeping stock down to the lowest possible point. Purchases are small and made only to fill out some grade that may have run short. Dealers profess to be confident that an improvement will soon develop, but it is difficult to assign any substantial reason for optimism, in view of the changes in business conditions and in the character of the demand for goods, which must take place before manufacturers will need wool substitutes in large volume. We quote as follows:

SHODDIES AND EXTRACTS.

White yarn, best all wool	45-47
White knit, all wool, best fine	35-40
White knit, No. 2	30-36
Light yarn, extra fine	31-36
New pure indigo blue	29-31

Merino.

Fine light, all wool	24-27
Medium light, all wool	15-18
Fine black, all wool	26-28
Fine dark, all wool, best grade	20-22
Medium dark, all wool, No. 2	15-17
Red knit stock, strictly all wool	20-21
Red flannel, all wool	21-24
Dark blue for hosiery, strictly all wool, No. 1	22-23
Dark blue for hosiery, not all wool, No. 2,	15-18

WOOLEN RAGS.

Fine merchant tailors	10½-11½
Choice light colors	15½-17
Browns	11½-13
Blacks	9-11½
Fine blues, plain	9½-11
Fine dark	10-12
Medium dark	6-7½

Worsteds.

Blue	15-16½
Black	20-21½

Serges.

New black	13½-16
New blue	13-15½

Flannels.

New scarlet	19-20
New blue	15-17
Cloakings	3-4½

SOFTS AND KNIT STOCK.

Soft woolens, best	5-6½
Old white flannels	20-22
Old red flannels	13-14½
Old blue flannels	8-9½
Old plaids	8-9
White stockings	20½-22
White hood stock	20½-21
Clear hoods	9-10
Blue stockings	8½-9½
Fancy stockings, No. 1	9-11
Gray stockings	10-11½
Black stockings	9-10½
Knit stock comforters	7½-8½
Red knit	13½-14
Light gray knit	10½-11½
New light fancies	14
New fancies	11-12½

Merinos.

Light, fine	16½-17½
Light, coarse	6-7
Fine, dark	11-12½
Coarse, dark	4-5½
Blue	10½-12
Black	13-14½

FLOCKS.

Shear, fine white, all wool	10-12
Fine indigo blue, all wool	7½-8
Fine black and blue, all wool	6½-7
Fine dark, all wool	3-4½
Gig, fine, all wool	2-4
No. 1 black, all wool cut	6½-9½

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Cotton and Wool Wastes

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COTTON YARNS.

Contracts made with Cotton and Woolen Mills for Yearly Waste Production. Correspondence solicited. Shepperson's Code, 1878. Cable Address "Charles."

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Established 1871 **FLOCKS**

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By J. T. Broadbent.

of the Bradford-Durfee Textile School, Fall River, and formerly of the Mississippi Textile School.

This little Manual was prepared with the idea of telling briefly, but comprehensively, the things about the cotton fibre, its cultivation, and the ginning and marketing of the cotton crop, the different kinds of cotton, and other matters bearing on raw cotton, such as the average student or person connected with cotton manufacturing or the sale of cotton goods, wants to know.

There are excellent chapters on cotton baling, describing the different kinds of bales and baling processes, and on the opening and mixing of cotton in the mill, with account of different machines employed, and improved methods of mixing.

The book contains about 100 pages with 20 illustrations, and should be in the possession of every person having to do with cotton in any state, from the seed to the retail purchaser.

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Manufacturers of

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COTTON WASTE.

No. 1 Spinners	1-12
Machine Cop	7-8½
No. 1 Cop	6½-7
No. 1 Card	7-9
No. 2 Card	5-6½
No. 1 Oily Card	4-5
No. 2 Oily Card	4½
Peeler Combing	10-11½
Egyptian Combing	9½-11
No. 1 Linters	5
No. 2 Linters	3½-5
Woven White Clips	7½
Woven Colored Clips	3-4½

Pennsylvania, Philadelphia. F. A. Bochman & Co., manufacturers of dress goods on 400 looms at 2d and Cambria Sts., are reported as operating their weaving department both day and night, with two shifts, in an effort to get out orders which call for immediate delivery.

Pennsylvania, Philadelphia. William M. Cathrall, 549 Drexel Bldg., who is well known to textile manufacturers throughout the country, desires to inform manufacturers of hosiery who wish to sell their goods in Chemnitz, Germany, to communicate with him at once.

Pennsylvania, York. A proposition for the reorganization of the York Silk Mfg. Co. has recently been made to their creditors, the plan being that a bond for 50 per cent. of the indebtedness, payable in five years, be issued by the new company, that 10 per cent. be paid in cash and the balance in notes of three, six, and nine months' time. Claims under $1,000, under this plan, are to be paid in full at once. The proposition involves the choosing of five new directors by the creditors. A raw silk house, it is said, has agreed to supply enough raw material to keep the mills running for a year.

*Rhode Island, Bellefont. It is understood that the offer of J. M. St. John of N. Y. to lease the Whittle Dye Works Company's plant for one year will be accepted, and that the lease is now being drawn up.

*Rhode Island, Bellefont. The reorganization of the Brindle Webbing Co. has been completed. The new company is known as the Bellefont Webbing Company. It is a corporation with capital stock of $20,000. F. W. Tillinghast is pres., G. F. Phillips, treas., and J. Grimshaw, supt.

*Rhode Island, Greenville. The Hygienic Fibre Co. advise that the loss due to the recent fire was confined to one of the driers, without any damage whatever to stock or other machinery.

Rhode Island, Pawtucket. The plant of the Zephyr Textile Co. is for sale. Chiffons and veilings are manufactured on 54 looms, the product being dyed and finished and sold direct.

*Rhode Island, Thornton. The Fitch Mfg. Co.'s mill is being repaired, but there is no indication that it will be started up at present. It is understood the plant, both buildings and machinery, is for sale to parties who will take it in its entirety.

FIRE, LIGHTNING, WINDSTORM.

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ASSETS January 1st, 1908	$20,862,698
LIABILITIES (Including Capital)	13,659,487
RESERVE AS A CONFLAGRATION SURPLUS	500,000
NET SURPLUS OVER ALL LIABILITIES AND RESERVES	6,703,211
Surplus as Regards Policy-holders	10,203,211
Losses Paid Since Organization Over	110,000,000

Note amount of surplus after providing for San Francisco and other conflagrations.

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AREUNAH M. BURTIS, Secretary.
CHARLES L. TYNER, Secretary.
HENRY J. FERRIS, Asst. Secretary.

Dyestuffs and Chemicals.

Acids.

Acetic, 100 lbs.	2.65-3.20
Citric, domestic	51-53½
Oxalic	8-9
Sulphuric, 66 deg., 100 lbs.	1.30-1.80
Muriatic, 18 deg.	1.20-1.75
Tartaric crystals	28½-29½

Miscellaneous Chemicals and Dyestuffs.

Acetate of lime, gray, 100 lbs.	2.50-2.80
Alum, lump	1.75-2.00
ground	1.85-2.15
powdered	2.85-3.25
Aqua ammonia, 26 deg.	4-6
Ammoniac, sal., gray	6-8
Borax, bbls.	5½-6½
Brimstone, crude, ton	22-50
Copperas	65-80
Cream tartar, crystals	23-24
Fuller's earth, powdered, ton	18½-22½
Glauber's salt	54-65
Potash, chlorate, crystals	9-10½
powdered	9½-11
carbonate	4½-6
Soda, bicarbonate	1.62-1.72½
Soda, caustic, domestic, 60 per cent.	1.80½-1.90
Sal., American	72-85
Vitriol, blue	5-6
Acetate of soda	4-6½
Acid, picric, best crystals	26-27½
tannic, commercial	36-42
Albumen, egg	65-75
blood	24-36
Alizarine, red	17
Aniline, oil	12½-13½
salt crystals	12
Bichromate of potash, American	9-10
Bichromate of soda	7-8
Bisulphite of soda	1-2½
Cutch, mat	5-6½
Dextrine, imported potato	6-7
Divi-divi, ton	45.00-65.00

Tennessee, Lebanon. Dr. H. K. Edgerton is promoting a company for the erection and operation of a woolen mill. This probably refers to the proposed plant for knitting woolen knitted fabrics in which S. A. Hawks was previously reported as interested.

Utah, Beaver City. It is reported that a deal has been consummated by which the property of the Beaver Woolen Mfg. & Milling Co. has been passed into the hands of a company of farmers. It is proposed to prepare for the production of blankets and other heavy woolen goods.

*Virginia, Danville. The report that J. W. Wayne of Coplay, Pa., is organizing a $50,000 company to build a 100-loom plant in this city has not been confirmed.

Barrett Specification Roofs

GIVE REAL FIRE PROTECTION

TRADE B MARK

THE NEW KEUFFEL & ESSER BUILDING, HOBOKEN, COVERED WITH BARRETT SPECIFICATION ROOF

AFTER having their entire plant destroyed by fire in 1906, the Keuffel & Esser Co., one of the largest manufacturers of engineering instruments, etc., in the country, built their new plant as nearly fireproof as possible.

The new building, illustrated herewith, is of high class concrete construction, and covered, as was the old building, with a Barrett Specification Roof.

The following letter explains their reasons for again selecting this roof covering:

The Commonwealth Roofing Co., Jersey City, N. J.

Replying to your favor of the 19th, we beg to say that we found that our buildings which were destroyed by fire a year ago, all of which were roofed by your Company, had the roof-boards burned almost entirely through before the roofing gave way. This, in our opinion, proves that your roofing* is an excellent fire-retardant and we do not hesitate to recommend it as such.

KEUFFEL & ESSER CO.,

*Laid according to The Barrett Specification. (Signed) W. L. E. Keuffel, Supt.

Barrett Specification Roofs, owing to the fact that they are made of non-conducting materials and that the top surface is composed of slag or gravel, are more fire retardant than tin or metal of any kind. They are absolutely immune from fire caused by sparks, burning debris and embers falling on the roof from a fire in the immediate neighborhood. Of course, when the roof is attacked from within the building and its support is burned away, any form of roofing will collapse from its own weight, but even under such conditions a Barrett Specification Roof will, as proved by the above letter, remain intact longer than any other kind.

We have just issued a most interesting booklet entitled "Real Fire Protection," which we should be glad to send anyone interested free on request.

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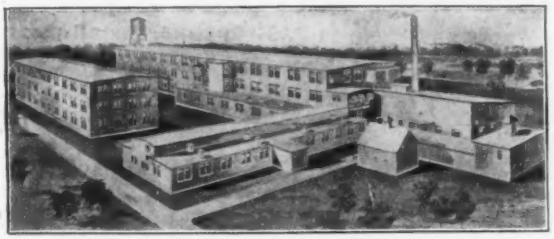

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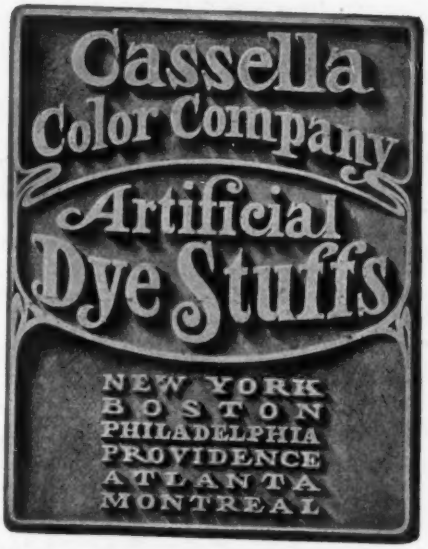

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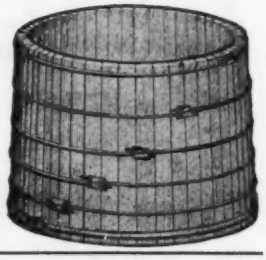

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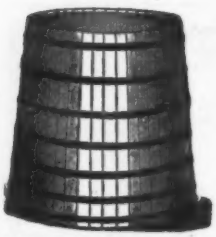

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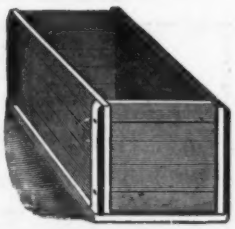
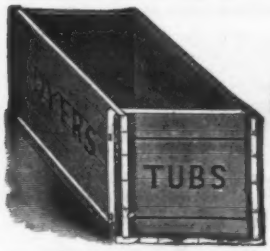


Office 1429 Chestnut St., Philadelphia, Pa.



Established 1868.

AMOS H. HALL, SON & CO.,

Manufacturers of

Cedar Vats and Tanks

2915-2933 North Second Street,

PHILADELPHIA, PA.

Tubs and Tanks of all kinds for Dyers, Bleachers, Factories, etc.

Down Town Office, 140 Chestnut Street, Corner Second.
Hours from 12 to 1

TANKS

All sizes all shapes.

Built to Last

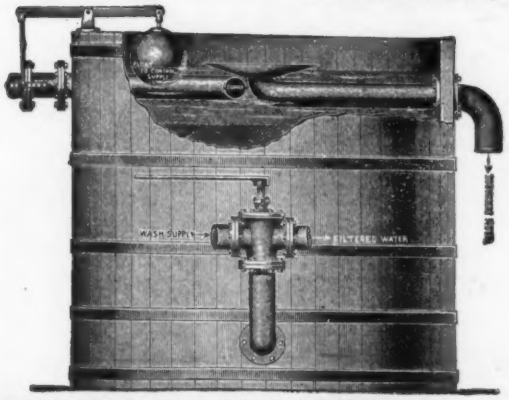
LARGE TANK WORK A SPECIALTY

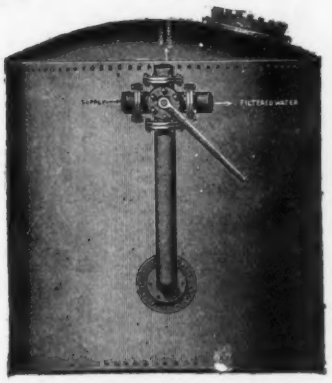
Send for catalog. Established 1849.

The A. T. Stearns Lumber Co., Boston

NORWOOD ENGINEERING COMPANY,

FLORENCE, MASS.

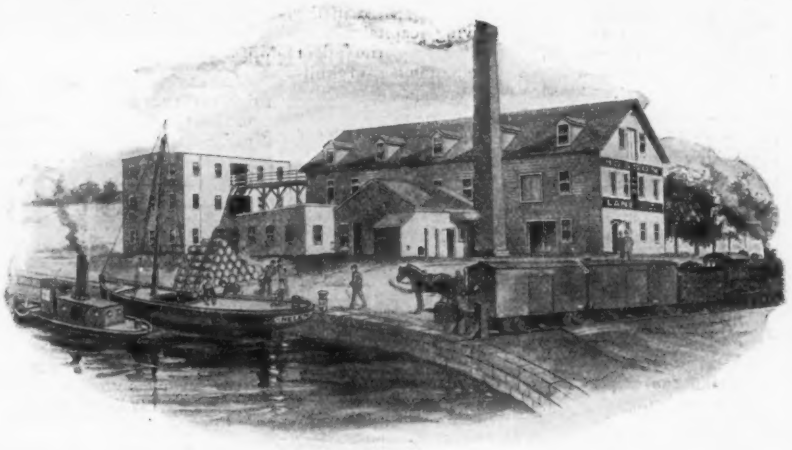




WILSON FILTERS FIRE HYDRANTS

Our filters are already in use in a number of the representative textile mills of the country, from whom we have received many expressions of satisfaction. Our representative will call and explain our system whenever desired.

Castor Oil our own make and Castor Oil Products. Unsurpassed in quality. They are the standards.



BOSSON & LANE,

MANUFACTURERS

ALIZARINE ASSISTANT
TURKEY RED OIL
SOLUBLE OILS
OLEINE

B. & L. ANTI-CHLORINE (ultra bleaching process)
OLO SOFFENE (superior cotton softener)
BI-SULPHITE OF SODA
SIZING AND FINISHING COMPOUNDS

Works and Main Office, ATLANTIC, MASS. (Suburb of Boston.)

Just off the press

1908 Edition

American Directory of the Knitting Trade

26th year—**The red covered book**—26th year

Over 100 new mills and thousands of changes since 1907. As there is only a limited edition it is well to order now.

Handy size for the Pocket About 500 pages Price, $1.00

What it contains

Full reports of every knitting mill in the United States and Canada, giving capitalization; names of the officers, including superintendent and buyer; kind of goods made; number of knitting machines, whether latch or spring needle; number of sewing machines; whether the mill dyes or bleaches or finishes; kind of power; number employed; selling agent; kind of yarn bought.

Special copyrighted maps of the mill districts, showing the cities and towns where there are knitting mills. It is so indexed that any town may be quickly found. This section of the directory is arranged alphabetically by states and towns.

Carefully classified index of manufacturers according to kind of goods made, all the manufacturers of various kinds of goods being grouped together.

Alphabetical index of manufacturers, giving the page number where full report of mills is to be had.

List of dyers, bleachers, finishers, printers, etc., making a specialty of knit goods work.

Manufacturers' selling agents and commission merchants handling knit goods; the name of the person in charge of the knit goods department is given, and when a concern is sole agent or special selling agent for certain mills the names of the mill sold for follow the agent's names.

List of the jobbers of knit goods, telling the kind of goods handled and the name of the buyer, with the New York address.

Department stores and large retailers handling knit goods, with the names of the knit goods buyers and the address of the New York office.

An index of machinery and supplies used in the manufacture of knit goods, also yarn dealers supplying knitting yarns.

Published by the

LORD & NAGLE COMPANY

Textile Publishers, 144 Congress St., Boston

New York **Philadelphia** **Chicago**

UNION SPECIAL
MACHINE COMPANY

HIGH SPEED ELASTIC STITCH SPECIAL SEWING MACHINES FOR MANUFACTURING PURPOSES

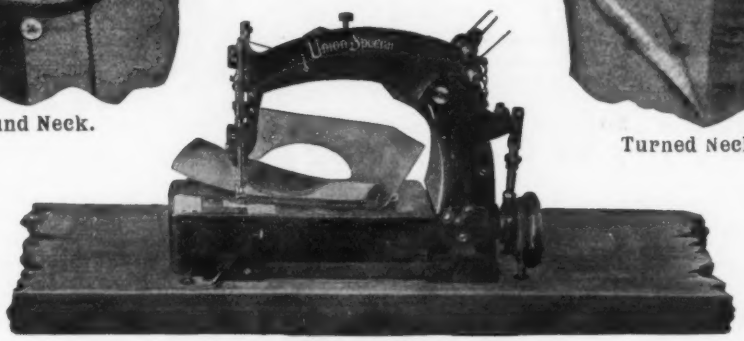
TRIPLE THE EFFICIENCY *of* YOUR OPERATORS.

Bound Neck.

(1) Cutting Out Neck Piece
(2) Stitching It to Back
(3) Ornamental Edge Covering
all in One Simple Operation.

Turned Neck.

Perfect Work.



High Speed.

STYLE 6900 G.

SPECIALLY DESIGNED FOR "NECKING" KNIT UNDERSHIRTS.

The one machine may be used to make either turned or bound necks.

(*Both operations on this machine, patent applied for.*)

Most Durable Sewing Mechanism Ever Constructed.

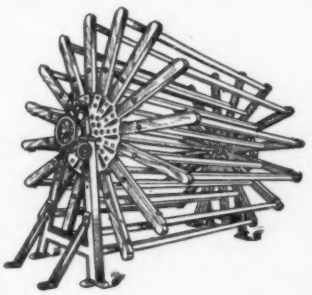
96 South St., Boston, Mass.
50 E. Main St., Amsterdam, N. Y.
51 Mohawk St., Cohoes, N. Y.
40 St. Antoine St., Montreal, Can.

MAIN OFFICE AND FACTORY
75 E. Kinzie Street, Chicago, Ill.
GENERAL EASTERN OFFICE
47 Leonard St., New York.

731 Arch St., Philadelphia, Pa.
806 Main St, Cincinnati, Ohio.
1507 Olive, St., St. Louis, Mo.
1525 Broadway, Almeda, Cal.

Leaves yarn in beautiful condition—Bailey's Cold Air Drying System

Yarn dried by this system is much softer, winds and weaves better, shows less percentage of waste and the colors develop better. In use in over two hundred mills. Simple, effective, inexpensive. Investigate its merits for your profits sake. Where great capacity is wanted my *hot air system* is unequalled.



Dye Sticks, Dry Poles, Fans, Trucks for Yarn Dryers and Dye Houses.

FRANK BAILEY, Manufacturer, Works at Braddock.
P. O. Ad., Cedar Brook, Camden Co., N. J.

Wildman Manufacturing Co.

Norristown, Penn., U. S. A.

Manufacturers of

Circular Rib Knitting Machinery

Automatic
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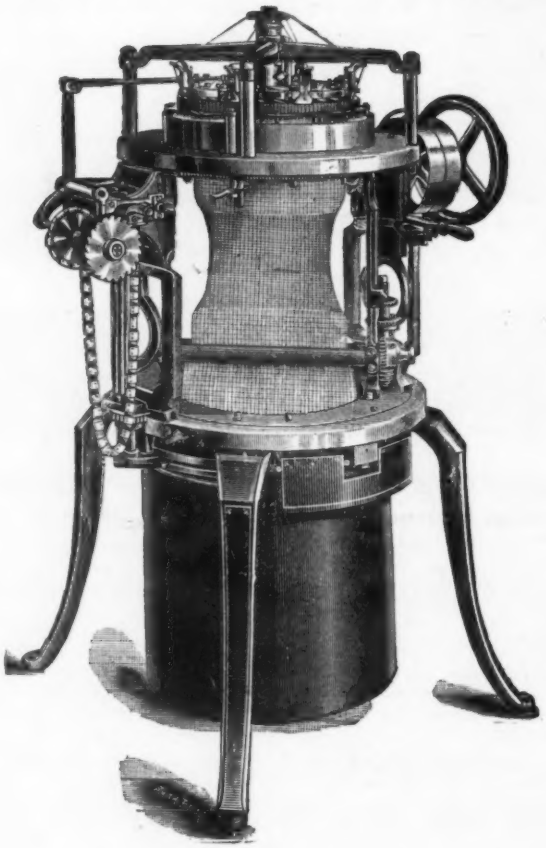
Motions



Electric
Cloth
Cutters

AUTOMATIC AND PLAIN

For all classes of Ribbed Hosiery, Underwear, Combination Suits, Sweaters, Etc.

FRIEDBERGER-AARON MFG. CO.

Leading Manufacturers

Braids and Edgings

For Trimming

Ladies' Ribbed Underwear.

Having Installed More New Machinery and **Increased Our Facilities** in general, we are in better position than ever to sustain our **Established Reputation.**

Mills: Germantown, Philadelphia

P. O. Address, Logan Station, Philadelphia.

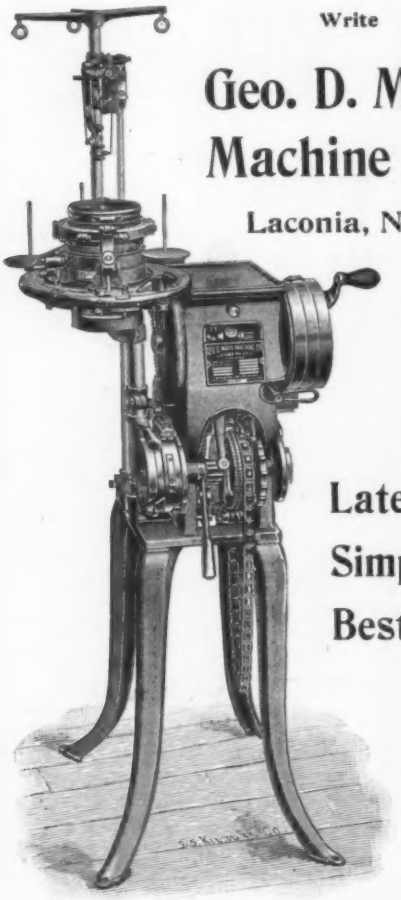
If You Want

Largest Production For Least Money

Write

Geo. D. Mayo Machine Co.,

Laconia, N. H.



Latest
Simplest
Best

MAYO'S

New Full Automatic Knitter

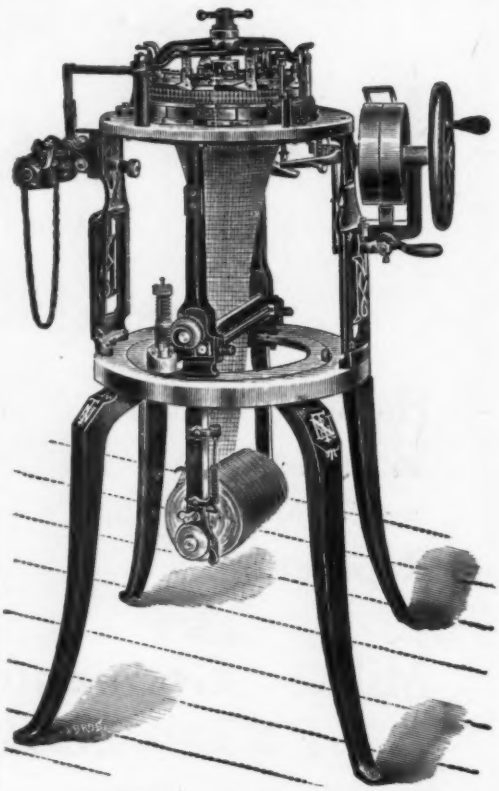
PHILADELPHIA OFFICE,
KNICKERBOCKER BLDG., COR. SIXTH AND ARCH STS.,
B. M. DENNEY, REPRESENTATIVE.

NYE & TREDICK CO.

Circular Rib Knitting MACHINERY

For making Ribbed Underwear, Combination Suits, Sweaters, Cuffs, Shirt Borders, Hosiery, etc. : ; :

Correct Construction. Excellence and Durability.



LATEST IMPROVEMENTS
QUALITY OF FABRICS AND PRODUCTION
UNEXCELLED

NYE & TREDICK CO.
606 Arch St., PHILADELPHIA, PA.

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The Most Productive, Strongest and Best

Full Fashioned Hosiery Machines

System **G. Hilscher, Chemnitz, Saxony,**

Can Be Delivered in Short Time and Fully Guaranteed
By the Exclusive Agents and Importers

THE GROSSER KNITTING MACHINE CO.

WOOL EXCHANGE
Rooms 400-421-423

MAX NYDEGGER

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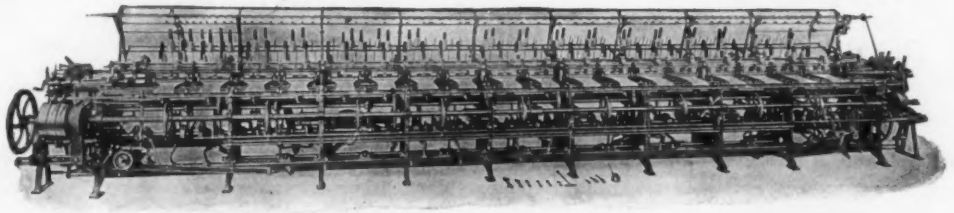
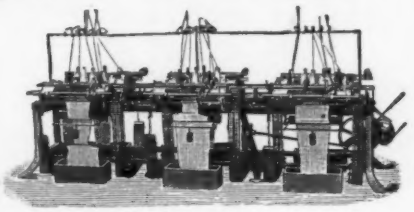
NEW YORK



18 Section "COTTON HILSCHER" Machine for Full Fashioned Silk Hosiery
Gold Medal, Paris, 1900 — Numerous Patents Covering Special Improvements

All Special Machines For Any Article That Is Knit



GROSSER Flat Knitting Machines
For HAND Power or FULLY AUTOMATIC Power MACHINES. Most productive and best machines for Sweaters, Jackets, Blouses, Wool Hosiery, Gloves, Mittens, Sporting Goods in Plain, Fancy and Jacquard Work, Shaker Articles, etc. Large stock on hand. Power Machines to be seen in operation.

FRENCH FRAMES
C. Terrot Söhne, Cannstatt, Würt, famous builders of the best Circular Frame for Finest Underwear, Fleece Linings, Gloves, Special á-jour (open work) Fabrics, etc.

RASHEL MACHINES [Double Rib Warp Knitting Machines.]
For Fancy Goods in largest variety, Shawls, Capes, Caps, Borders, Fringes, Lace Work, etc., in silk, wool, cotton.

SPOOLERS, Parafiners, Finishing Machines for the knitting business.

Exclusive Agency for the Famous

Julius Koehler DIAMENT OVERSEAMERS, indispensable for all full fashioned articles, Hosiery, Gloves, Jersey Sweaters, Sporting Goods, etc.

LOOPERS Double thread Lock stitch, self-cutting and cleaning attachment. Reliable money saver.

FRITZ ZACKE LATCH NEEDLES, for any purpose in the knitting line, patented rivets.

Samples, Specifications, Prices, etc., upon application.

JAMES TAYLOR, 121 Arch Street, Philadelphia Pa.

ALL KINDS OF NEW AND SECOND HAND **KNITTING MACHINERY**

A RARE OPPORTUNITY TO BUY.

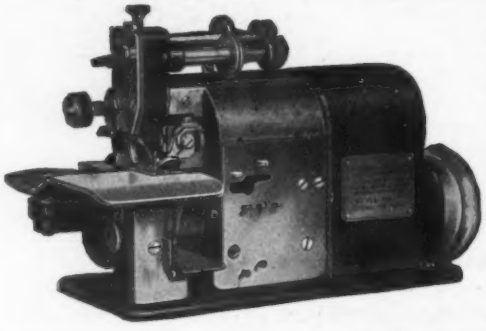
1 Bruce band folder and cutter.
38 Beattie & Hepworth & Abel loopers.
4 Hosiery presses (lever).
60 Lamb and Grosser sweater machines.
100 Ribbed underwear machines, various sizes.
50 Brinton & Co. ¾ aut. knitters, sizes.
30 Union Special machines, various styles.
1 Rotary fire pump.
100 feet woven rubber hose, 3 inches dia.
3 Toque machines.
100 Brooks welters.
250 Brinton & Co. and other make hosiery ribbers.
140-Ribbed shirt machine cylinders and dials, all sizes, cuts and makes.
2 Grosser Jacquard machines for gloves.
3 Cyclone dryers. (Hosiery.)
5 Band folding and cutting machines.
1 Centrifugal Pump.
1 Small Steam Pump. 1 Small Belt Pump.
2 Lamb border machines, auto. rack.
2 20 Plate Crawford Screw Press, 31x43.
2 Double Ribbed Machines.
5 Cop and Skein Winders.
1 Pownall Screw Press 34 x 52 in.
1 Cleveland 42″ Belt Driven Extractor.
5 Pair Platform Scales.
1 Singeing Machine.
1 Hosiery Printing Press.
1 Cornely Embroidery Machine.
30 Standard "B" 200 Needle Machines.
20 " B 188 " "
54 " B Machines for sizes.
24 Mayo "Acme" " " "
500 Dozen hosiery shaping boards.
1 Crane Style Collarette Machine 20 in. diameter 16 Needles.
1 Curtis & Marble Napper.
1 McCreary 60 inch Napper.
22 National Knitters, 3¾ in,. 216 needles.
10 Jones Fleecers for hosiery.
1 Evans Screw Press 2 post 30 x 36.
10 Latest Imp. Knit Neckwear Machines.
1 44 inch Belt Driven Extractor.
30 National Spring Needle Hosiery Machines.

WRITE FOR COMPLETE LIST. APPRAISEMENTS A SPECIALTY.
We are always in the market to buy good second-hand Knitting and Finishing Machinery.

The Merrow

FAST
DURABLE
Light Running

High Speed Overseaming, Overedging and Scallop Stitch Machines are



OUR NEW STYLE 60 MACHINE for Trimming and Overseaming in one Operation produces the strongest, best Seam and does it with the greatest economy.

USE STYLE 18 for Horse Blankets.
STYLE 17 or 22 for Bed Blankets.
STYLE 35 B SHELL, for Necks and Fronts of Rib Goods, produces the most showy, substantial finish.

Send for Catalogue and Samples.

THE MERROW MACHINE CO. HARTFORD, CONN.

Knickerbocker Building, Sixth and Arch Sts., Phila. Room 321, 467 Broadway, New York

Full Fashioned Hosiery Machines

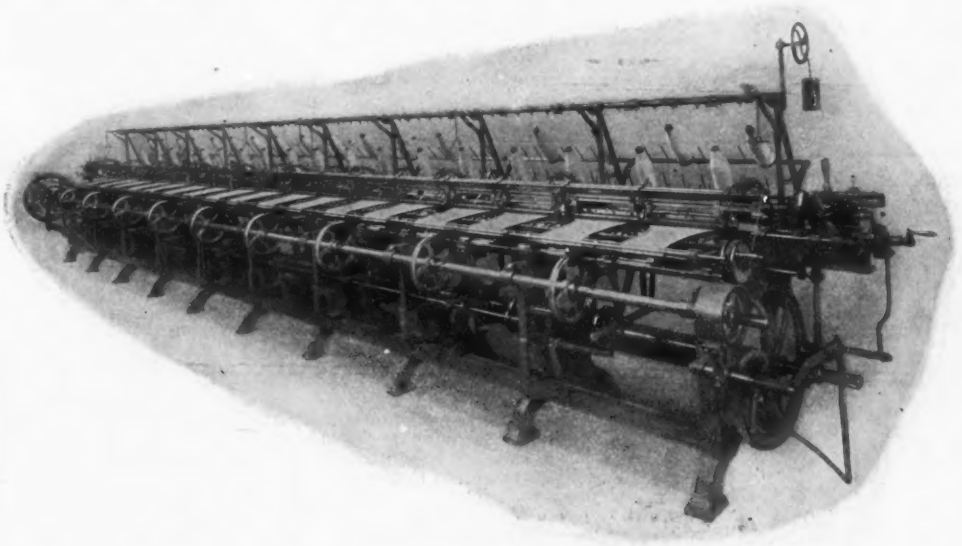
BUILT BY

SCHUBERT & SALZER

Largest Manufacturers of all classes of Hosiery Machines.

The plant, which is located in Chemnitz, Germany, declared by engineering experts and hosiery manufacturers to be the finest of its kind, is equipped with the most modern American and European machine tools, employing 1600 skilled workmen.

These machines have been proven the best constructed and most productive in the market for the manufacture of cotton, lisle and silk hosiery and since their introduction into this country 13 years ago have always been the leaders among a number of competitive makes, as upon trial they have fully borne out all that is claimed for them.



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All the leading manufacturers of full fashioned hosiery in this country. Largest individual order for 65 eighteen section machines placed recently by the new million dollar concern, the Brown-Moore Hosiery Co. of Philadelphia.

AMERICAN REPRESENTATIVE:

OTTO WALTHER, = 507 Bourse, = Philadelphia.

The Invincible

Full Automatic.

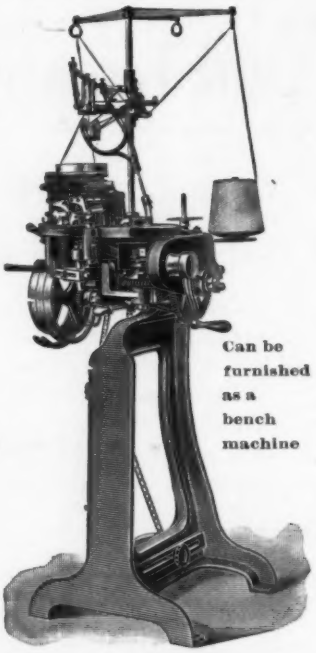
"The KNITTER that KNITS"

THE LARGEST PRODUCER OF PERFECT WORK.
SIMPLE, POSITIVE AND EASY TO OPERATE.

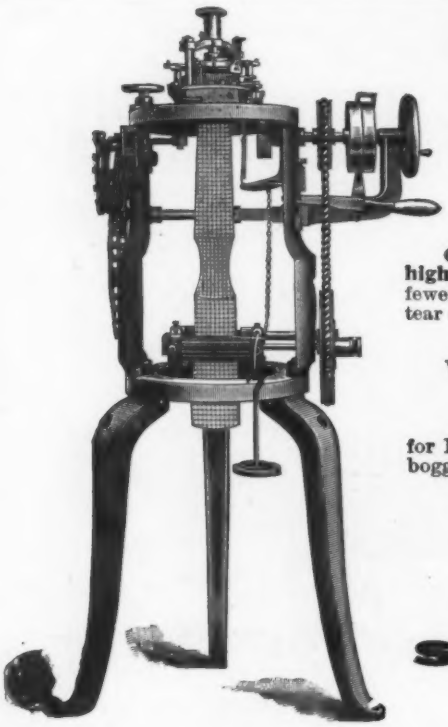
E. JENCKES MFG. CO.

Pawtucket, R. I.

PHILADELPHIA OFFICE,
101 North Sixth St.



Can be furnished as a bench machine



High Speed Rib Knitting Machinery.

Our latest model machinery has been designed to run at very high speed, giving large production. This is accomplished with fewer seconds, less breakage of needles, less jar and wear and tear on machines than has been customary at lower speeds.

We also make Special

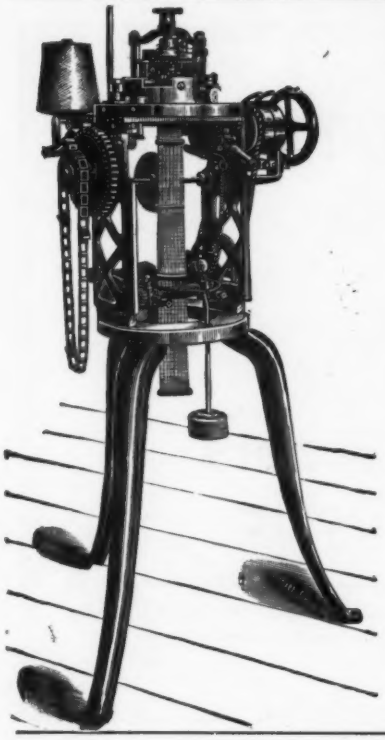
STRIPING AND DESIGNING MACHINES

for Fancy Golf Stockings, Bathing Suits, Sweaters, Toques, Toboggan Caps, Skirts, etc.

Our Machinery gives large production at low cost and enables manufacturers to meet the market always and make a profit.

STAFFORD & HOLT,

LITTLE FALLS, N. Y.



H. Brinton & Co.

213-215 Race Street, Philadelphia, Pa.

BUILDERS OF

Knitting Machinery

For HOSIERY and UNDERWEAR.

Complete Estimates Furnished. Send for Particulars.

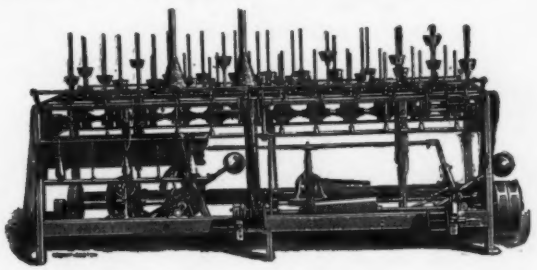
The cut shows our Improved Automatic Ribber with Welt and Slack Course for Half Hose, Tops and Ribbed Legs.

CIRCULAR KNITTING MACHINES

Either plain or full automatic, with stop motions complete. 4 to 24 feeds for

RIBBED UNDERWEAR

Automatic Racking and Striping Machines for Sweaters, Cardigans, Collarettes, Cuffs and Anklets.



ALSO BUILDERS OF THE WELL-KNOWN

ABEL WINDERS, SEAMERS and LOOPERS.

LEIGHTON MACHINE CO., - Manchester, N. H.

EXCELSIOR KNITTING MACHINE MFG. CO.

Meadow and Washington Streets

ALLENTOWN, PENNA.

BUILDERS OF

Full Automatic Knitters

With or without **Transferring Device**

ALL SIZES AND GAUGES, 2 1-4 INCH TO 4 INCH

"Acme" and "Hemphill"

SEAMLESS HOSIERY

Knitting Machines

built by

Mayo K nitting Machine & Needle Company

Franklin, N. H.

Answer all purposes in the *most reliable*, *up-to-date*, and *economical* manner. Write us for full particulars.

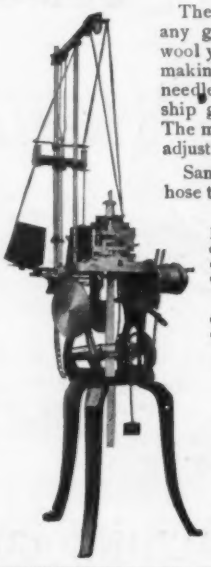
Manufacturers like our Latch Needles

because we make a superior grade of needles.

Philadelphia Office, Knickerbocker Bldg.

Use the Ruth

Ribber and Stop Motion



The Ruth Ribber will produce any gauge goods from cotton or wool yarn at a high speed without making bad work or breaking needles. Material and workmanship guaranteed to be first-class. The machine is easy to operate and adjust.

Samples of 240 needle gauze half hose tops furnished by request.

Meet us in Philadelphia at the Exhibition of the National Association of Hosiery Manufacturers of Knit Goods, May 11-16, 1908, or write us now.

Many mills are pleased with our machine and we are sure we can please you.

Give us a trial. Write to-day.

RUTH

Machine Co.

YORK, PA.

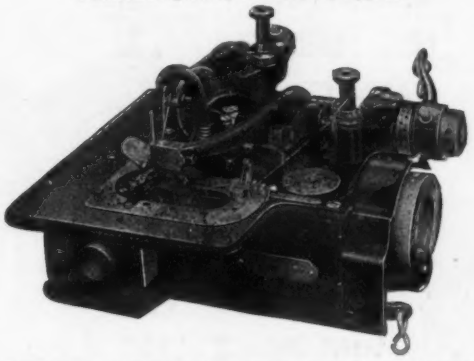
G. W. RUTH, Manager

AN INSTRUMENT OF PRECISION!

"OVERLOCK" MACHINE

(Trade Mark) (Pat. April 5, 1892)

Patent twice upheld by U. S. Court of Appeals



Trade Mark

Business Established in 1859.

For TRIMMING, SEAMING (or Hemming or Overedging) and COVERING Raw Edges of Knit Underwear and Hosiery in **ONE OPERATION** at **3000 Perfect Stitches per Minute.**

WILLCOX & GIBBS SEWING MACHINE CO.,

General Offices: 658 BROADWAY, cor. BOND STREET,

NEW YORK, N. Y.

LONDON PARIS MILAN DRESDEN BRUSSELS NOTTINGHAM

Walter The Best and Most Reliable

Flat Knitting Machine

Walter & Co., Ltd., Mühlhausen, Thür, Germany.

Stock OF MACHINES THE MOST IN DEMAND AT E. W. S. JASPER, New York LIBERTY ST., 120-122

You Save Enough Insurance to Pay for the Equipment.

So it costs you NOTHING to have the AMERICAN WATCHMAN'S CLOCK. Fully approved by all insurance companies. We equip factories with Fire Alarms, Signals, etc., also Employee's Time Recorders, and Telephone Systems. Electric Time System consists of Master Regulator in office with secondary electric clocks throughout the mill, insuring accurate time. Send for particulars.

Pettes & Randall Co., 150 Nassau St., New York

CHARLES H. SCHNITZLER,

Patentee and Sole Manufacturer of

THE PNEUMATIC CONVEYOR

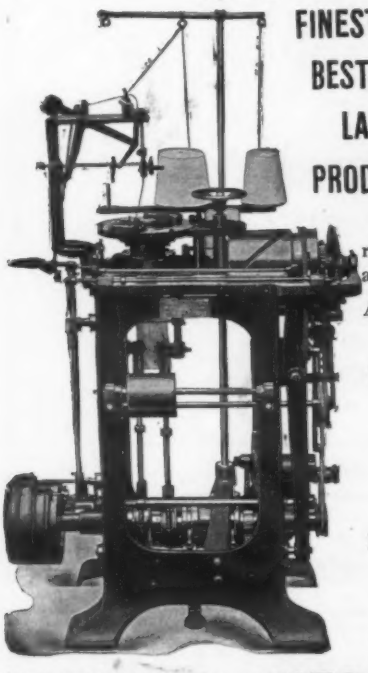
For the handling of wool and cotton stock, rags, excelsior, jute and all kinds of fibrous material, wet or dry. Also spool elevators, steam heating and ventilating, and mill work generally. Blower and fan work a specialty. This conveyor is patented. Beware of infringement.

SATISFACTION GUARANTEED Patented Oct. 15, 1889.

215 NORTH SECOND ST., - PHILADELPHIA, PA

"NATIONAL"

Stands for



FINEST GAUGES
BEST FABRIC
LARGEST
PRODUCT ON

Greatest Variety of Laces and Novelties.

Allautomatic.

Lowest Cost for Operating

Also
Rib Knitting Machinery, Overedge, Crochet and Shell Stitch.

NATIONAL AUTOMATIC KNITTER CO.

728 Cherry Street, PHILADELPHIA, PA.

The New Boss Seamless Knitter

Do you want the biggest production with the least menders, for the least money? If so, write to the Boss Knitting Machine Works for their circular with full directions. There is no cylinder to be handled. We use only one cylinder and transfer device for half hose or ladies' hose. This machine beats them all. Has no equal for simplicity and durability. Makes 300 revolutions per minute. Built in sizes from 2¼ to 5½; from 40 to 224 needles. Automatic in heel and toe. It is the strongest built knitter on earth.

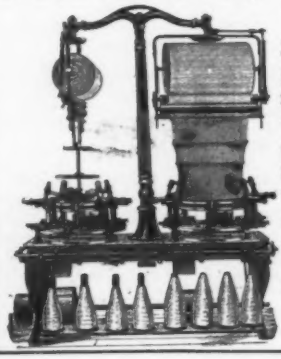
Send for prices and particulars.

THE BOSS KNITTING MACHINE WORKS,
Cor. Elm and Reed Sts., Reading, Pa.

We are the Oldest Manufacturers

of this Design of Spring Needle Knitting Machine in this Country

40 years' experience



Do not be misled by people who became manufacturers in 1903 without any previous experience who are trying to represent that they are the oldest manufacturers. Investigate.—

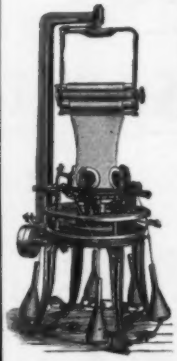
Robt. W. Gormly & Co.

Troy, N. Y.

CHARLES COOPER,

BENNINGTON, VERMONT,

MANUFACTURER OF



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Flat and Circular Rib, both Spring and Latch Needle, Plain Circular Machines, Lead or Trick Cylinder, **Spring Needle Cylinder Rib-Top Machines** for making Cuffs, Drawer Bottoms and Shirt Borders.

Spring and Latch Knitting Needles, Burr Wheels, Burr Blades, Sinkers, Jacks, etc.

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TIPPED HEEL AND TOE
WHITE FOOT
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CARTER TOP
LOOPERS SLACK COURSE

Most Stockings--Best Fabrics--Longest Life

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OFFICE AND SHOW ROOMS
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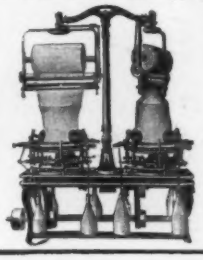
We Are the Oldest Manufacturers
IN THE WESTERN HEMISPHERE
Of Circular Spring Needle Loop-Wheel Knitting Machinery.

TOMPKINS BROS. CO., Troy, N.Y.

We submit the following extract from the sworn testimony of R. W. Gormly, in U. S. Circuit Court, Northern District of New York, in equity, No. 6764:
Cross Question 123. How long have you been a manufacturer of knitting machines? Answer. I started in this business about the middle of May, 1900.



Tompkins Knitter

This design was adopted in 1875.
BUSINESS ESTABLISHED in 1846, before ROBERT W. GORMLY Was born, according to his testimony in the case above cited.

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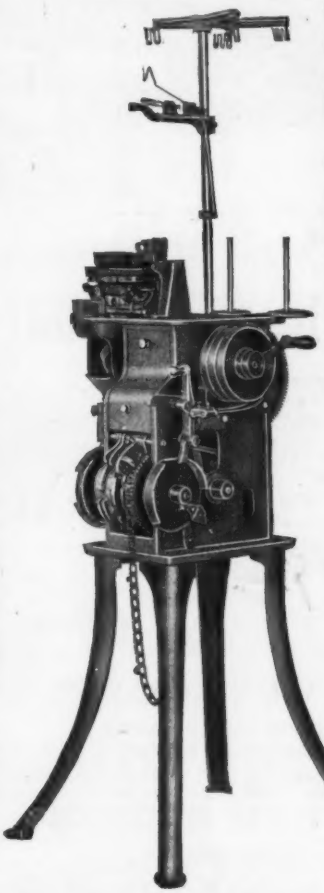
Hemphill's Latest

A FULL AUTOMATIC MACHINE
Specially adapted to



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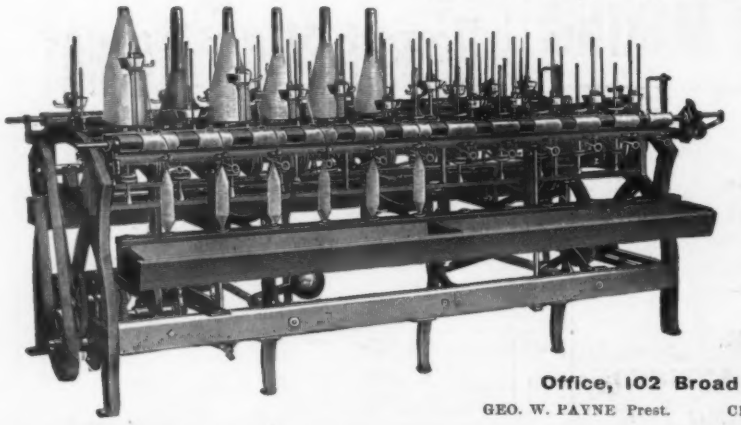
By Hosiery Manufacturers,
Wind for Cop, Skein or Bobbin.



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Upright Spoolers,

To Spool from Cop, Skein or Bobbin.

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Upright Quillers, Quill from Cop, Skein or Bobbin.

Ring Dresser, Spooler and Reel Spindles, Cop Skewers, Warp, Spool, Spooler, Guides, Bolsters and Stops Made and Repaired at Short Notice.

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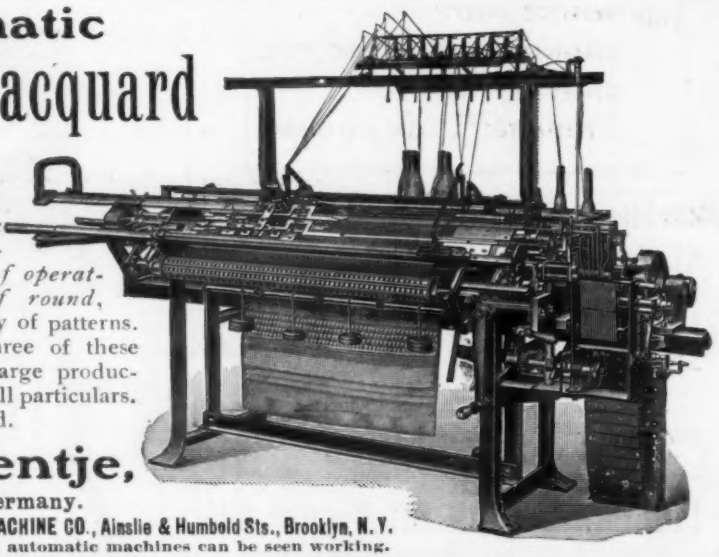

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LOOPING MACHINE.

Needle working from the inside, avoiding the breaking of needles and points and picking up the metal.

Single and Double Stitch, or Both Combined.

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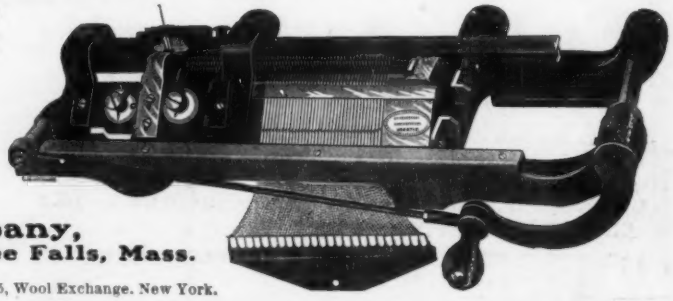
Most widely used; being operated in every civilized country in the world. For description, prices, etc., see catalogue.



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Patentees and Manufacturers of the only

Practical Automatic

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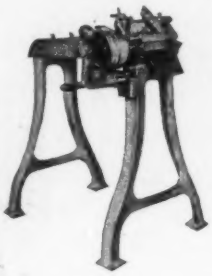

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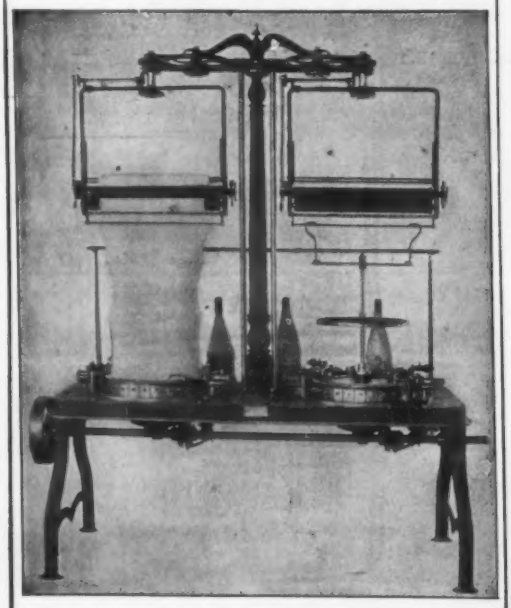

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Fast Black Dyeing, Finishing, Etc.

Also Resolvent Compound, Olive Oil, Soluble Oil and Cream Softener.

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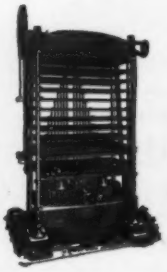

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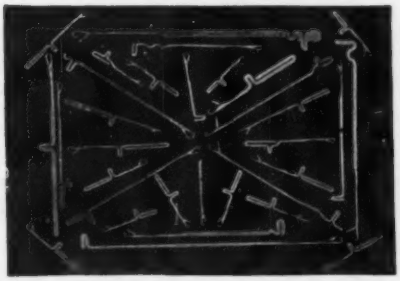

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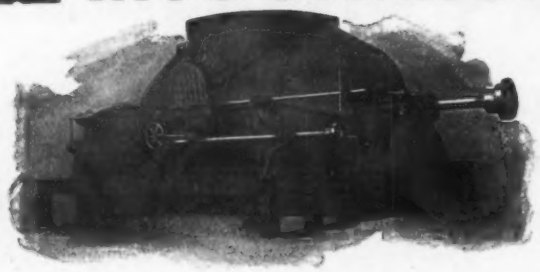

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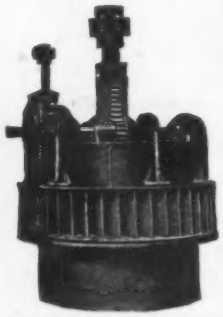

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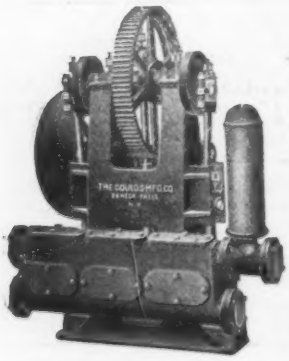

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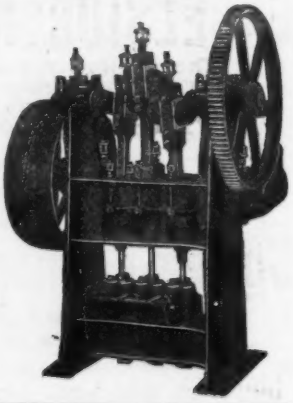

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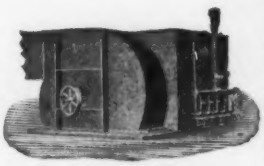

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This is insured, together with a comfortable temperature, by the "ABC" Fan System.

Full information upon request.

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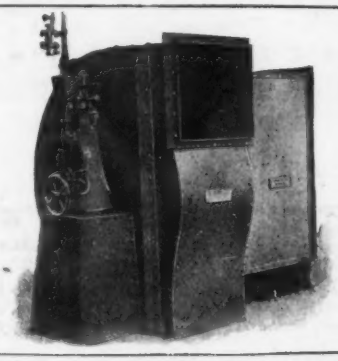

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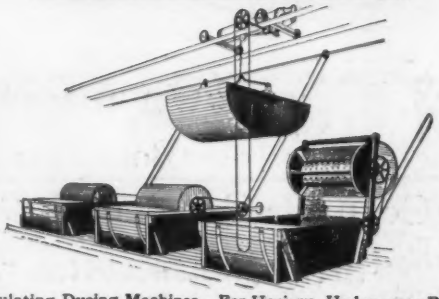

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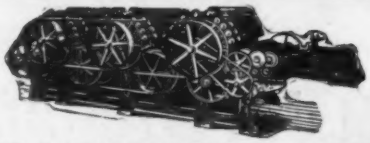

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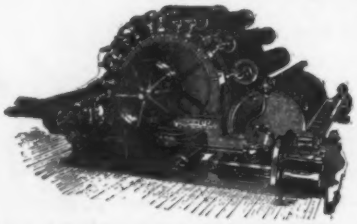
For reducing to Fibre Cotton and Wool Waste, Cloth Clippings, Etc.



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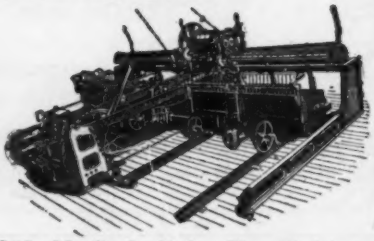

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Complete Equipment for Manufacturing Cotton Batting for All Purposes.

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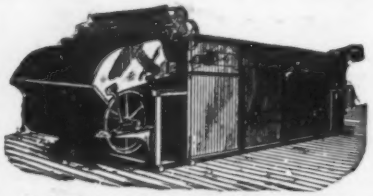
For Cotton Stock, Wool Stock, Rags, Yarn, Cloth Underwear, Stockings, etc.



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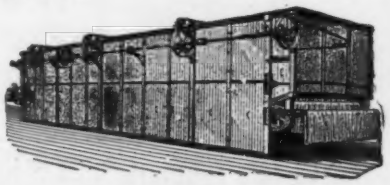

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Steel Bladed Ventilating Fans.

Iron Bowl Yarn Scouring Machines.

Complete Carbonizing Outfits for Wool, Rags or Cloth.

THE PHILADELPHIA TEXTILE MACHINERY CO.,

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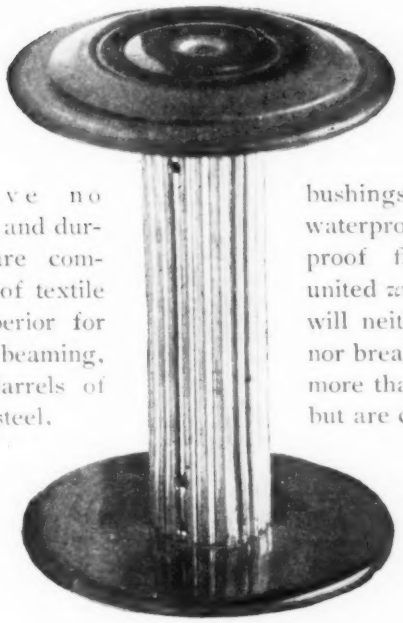

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bushings of shrunk birch waterproofed, heads of waterproof fiber, all securely united *without glue*. They will neither warp, splinter nor break. They cost a trifle more than spools of wood, but are cheaper in the end.

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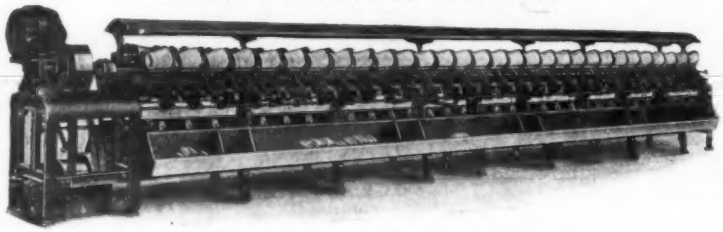

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New Model No. 12 Cone and Tube Winder.

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Importer

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WATER TOWERS

IRON OR STEEL

for Fire Protection and Domestic Service.

Built in all sizes.

Write for catalogue.

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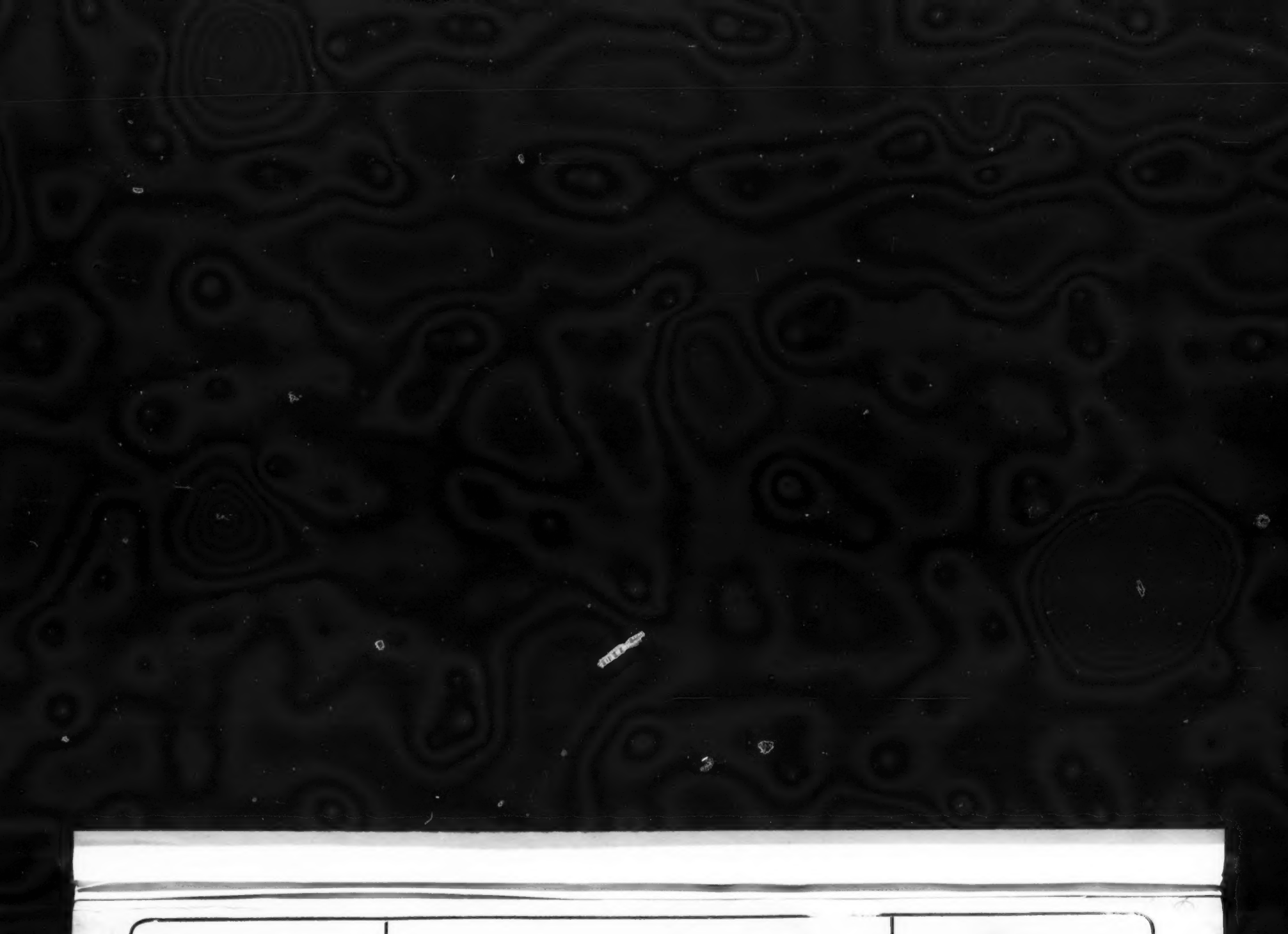
"Walmanco" Pipe Flanges
"Never Stick" Blow-off Cocks, Mill Supplies.

GENERAL OFFICES;

128 FEDERAL STREET, BOSTON, MASS.

New York Office: Park Row Building.

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